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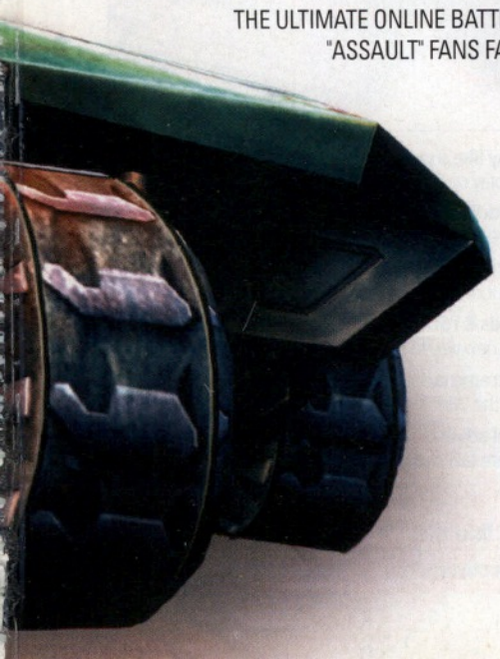

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www.makesomethingunreal.com

PC DVD ROM

PC CD

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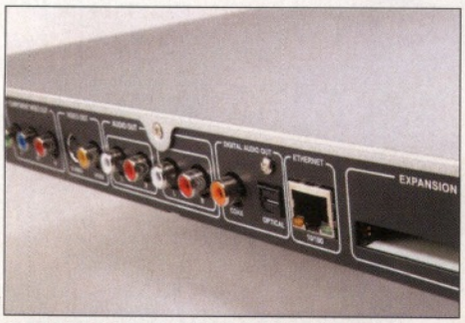
ATARI

Turn on...

News/Previews/Reviews/How tos

TRIED&TESTED

PC KIT PUT TO THE TEST



PINNACLE SHOWCENTER
82 A marvellous multi-media miracle.

NAMCO ARCADE CLASSICS
92 Bundled with five blasts from the past.

T&TCONVERGENCE
82 ShowCenter
83 Olympus DM-20 Conference Kit
83 SXPC Zen ST62K
84 Samsung 510MP
84 XP4 EVO
84 CTX S962A
86 ViewSonic PJ650
86 Trust 4500P 5.1 Home Theatre
86 Trust 738AV LCD Power Video

T&TUPGRADES
88 A7N8X-E Deluxe
88 WD740GD Raptor
90 GA-8TRS300M
90 LaCie Big Disk

T&TGAMING
92 Namco 5-in-1 Arcade Classics
92 Radeon 9800 SE
92 Asus V9880 Ultra
93 NF340 Race Master
93 Logic 3 Intruder
93 Radeon 9600 SE

T&TMOBILE
94 Portégé M200 Tablet PC
94 Motorola MPx200
95 EasyNote M
95 VT Book
95 TravelPower Adaptor

T&TSYSTEMS
96 Evolution Blue Beast
96 iExtreme Duo

HACKED IN 52 SECS

Defend your data against malevolent online forces. (p.20)

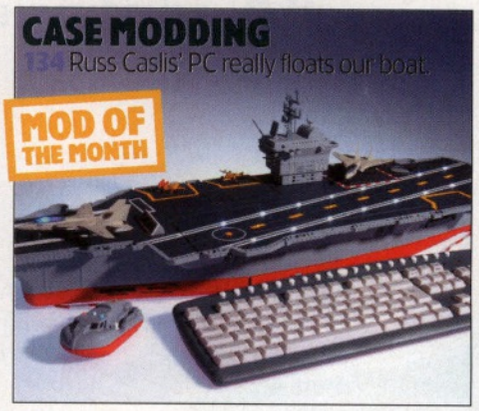
104 SUPERTEST

PDAs

WIN! A LAPTOP WORTH £1,600 p.174

PCF HARDCORE

MODS GET STUCK IN



132 Play like a pro
How to play on *RTCW's* Beach.

136 Modding helpline
Hardware tinkerer Titch tackles your modding problems.

138 Hardware hacks
Push your nForce motherboard to new extremes.

139 Mods & rockers
A whole new way to say "I love you."

140 Extreme customisation
Change the Windows interface with *WindowBlinds*.

141 Mini adventure
Robots are taking over our PCs.

PCF Alternative index

Where to find the freaky and foolish stuff...

Distorted animals p09 >> Ballsy beverages p11 >> Blue spiny insectivores p76 >> Rickety robots p141

PCFHub

Convergence section.
Turn to p35 for details.

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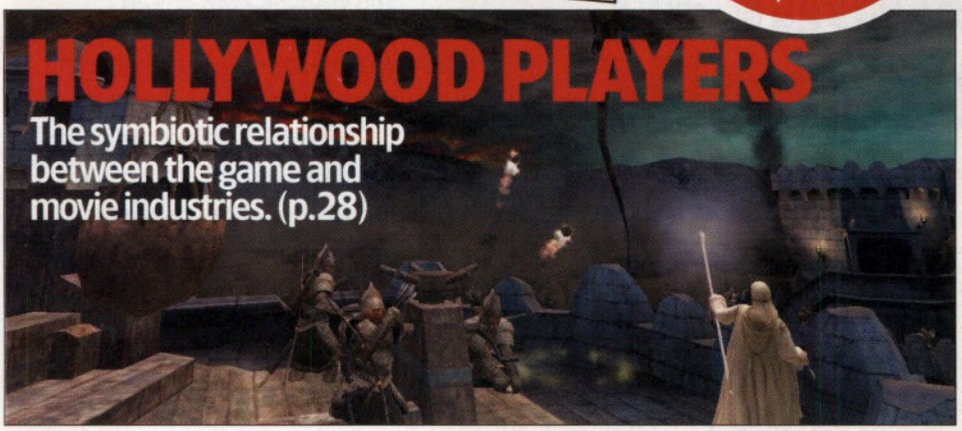
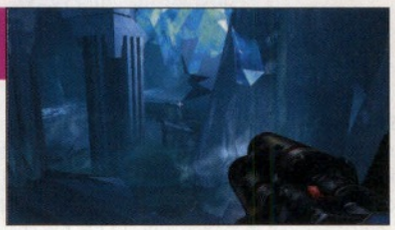
p.114



HOLLYWOOD PLAYERS

The symbiotic relationship between the game and movie industries. (p.28)

GAMEMAKER



BRAND NEW MODDING SECTION

146 UnrealEd Introducing static meshes
150 The Sims All you need to know about skinning
154 Games Factory Pro Create a basic 3D game
156 Secret Weapons Over Normandy Make missions

HOW TO...

DIY GET THE KNOWLEDGE

CALIBRATE A PROJECTOR

166 Perfect the image you project.

164 Webcams over a LAN
165 Track your email
167 Optimise audio files
168 Ask Luis

install

Games/Apps/Utilities

On this month's coverdiscs p.117

UT2004

More multiplayer mayhem.

PLUS COLIN McRAE RALLY 04 » X²: THE THREAT » VIETCONG: FIST ALPHA » UFO: ALIEN INVASION » PAINKILLER » BROWSERBOB LIGHT » ADOBE PHOTOSHOP CS » CANVAS 7 » ACEMONEY » MORE

8 NEWS

The Windows source code leak, next-generation consoles, the Intel Developer Forum, TiVo snooping, broadband bandwidth hogs investigated, how to buy a new processor, and much more...

REGULARS

114 Subscribe Claim your bonus gift
175 Letters Don't be a stranger, now
177 Alt.gaming Games they never made
128 & 178 Next month Coming soon...

GAMEPLAY

REVIEWED PLAY IT NOW

FAR CRY

64 Does it stand up to all the hype?

BATTLEFIELD VIETNAM

68 Proof again that war can be good.

72 Colin McRae Rally 04
74 Wars & Warriors: Joan of Arc
75 Paradise Cracked
75 Spells of Gold
76 Sonic Adventure DX: Director's Cut
77 Yu-Gi-Oh! Power of Chaos: Kaiba the Revenge
77 Budgets including... Cyberstorm 2: Corporate Wars Commandos 2 American McGee's Alice Shanghai Great Moments
78 Mod news

PREVIEWED FIRST LOOKS

HITMAN: CONTRACTS

50 The assassin's back to make a third killing.

54 Thief: Deadly Shadows Sshh, keep it down...
56 Evil Genius Nefarious shenanigans ahoy
58 Splinter Cell Tom Clancy's *Pandora Tomorrow*
60 TOCA Race Driver 2 *The Ultimate Racing Simulator*
60 Beyond Divinity Sequel to 2002's *Divine Divinity*
61 News Forthcoming releases on the gaming horizon

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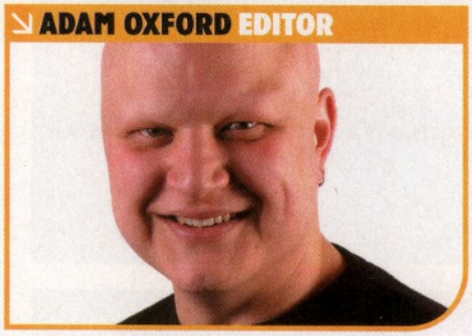

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DESPITE APPEARANCES and the odd flippant remark on our forums (**http://forum.pcformat.co.uk**) I'm not that egotistical. Which is why it was strange to be so full of myself when I found out I'd landed the top job on *PCFormat*. After I'd calmed down a bit, I realised that I wasn't being proud about myself, but that I'm amazingly excited to be back working on the UK's oldest and, frankly, best PC entertainment magazine. But I'm not the only face of *PCF* past to return this month – the magazine also welcomes back Annelise Brant, who has returned after a long voyage through the aesthetically pleasing lands of *Computer Arts* and *3DWorld* to take over as art editor. And newcomer Libby Pagett will be keeping us in check as production editor, having worked on *Digital Camera Shopper* and the *Guardian*.

It's not all good news and cheer, though. This is the last issue for 12 months for Katharine Davies, *PCF's* operations editor, who's kept the mag running smoothly for the last five years. Will we cope without her keen eye and understanding of deadlines? We'll do our best...

In the meantime, we're tackling online security – the single biggest issue in computing – head on this month. Turn to page 20 for our special feature and details on our disc package now.

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IN THIS PACKED ISSUE...

FAR CRY
Desert Island dreams P64

MAKING MODULAR
We reveal the kit to DIY for P134

HOLLYWOOD HITS
Playing with the pros P28

HOW TO DO
Hints, tips, tricks and all the latest P163

GAMEMAKER
Go on. Make it happen P145

SECURITY SCARE
Policing your PC P20

HITMAN 3
Be afraid. The other Baldy's back too P50

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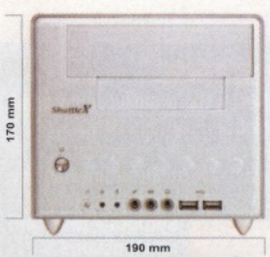

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Next big thing

News/Comment/Profiles

>>SECURITY SCARE

Windows source code leak

Less than three months into 2004 and Microsoft is already having its most insecure year yet, and the important question is how is this going to affect you?

Late into the night of 12 February 2004, news started popping up around the web that a 203Mb zip file was being distributed containing the source code for Windows 2000. When expanded, the file became 30,000 source code files containing several million lines of code dated from July 2000, and Microsoft has since confirmed it makes up about 15 per cent of Windows 2000 SP1. Although the leaked code dates from over three years ago, large parts of it almost certainly remain in Windows XP, meaning that hackers and virus writers now have a new level on which to attack all the Windows users out there.

In May 2002, in his testimony during Microsoft's anti-trust trial, Jim Allchin (group vice president at Microsoft) said, "The more creators of viruses know about how anti-virus mechanisms in Windows operating systems work, the easier it will be to create viruses or disable or destroy those mechanisms." If indeed true, we may be on the verge of a new wave of attacks.

The 650Mb of source code files were obtained from one of Microsoft's business partners, Mainsoft, who got it through the Windows Interface Source Environment (WISE) initiative to help it port Windows-based software to other platforms. Since the leak, Mainsoft has released very little information about the incident, keeping its comments restricted to one general press release: "Mainsoft takes Microsoft's and all our customers' security matters seriously, and we recognise the gravity of the situation. We are co-operating fully with Microsoft and all authorities in their investigation."

Back-patching

Because the source code constitutes only a part of the complete Windows source code, it is not possible to make a standard version of Windows 2000 out of it. However, it's enough to give hackers a helping hand in finding new vulnerabilities in Windows, and also gives a rare insight into the minds of the programmers at Microsoft. Some people who claim to have downloaded the source code allege that it contains "unusual" comments from the programmers, such as "HighContrast mode is turned on. This totally f***s our style sheet."

In order to combat the possibility of hackers using the old source code to wreak havoc with Windows 2000 users, it's likely that Microsoft will commit to a series of back-patches – setting its engineers to work on the old source code so that it can be brought up to speed with modern developments. As it stands, we think that Windows 2000 users should be afraid: Microsoft's apparent policy has been 'security through obscurity' for some time, and now the 'obscurity' part is blown out of the water, it may well leave Windows 2000 users like sitting ducks.

Stuart Oakin, the chief security officer at Microsoft UK, said, "Our early indications at this moment show that there is a very limited risk to our customer base. You can never say there is no risk, but we think there is a very limited risk. 800,000 developers already had access to our source code through our shared-source code, and that includes ISVs [independent software vendors] and partners." Microsoft has now passed the investigation into the hands of the FBI, and the search continues for the hacker who leaked the source code in the first place.

It gets worse

The source code leak follows two critical updates that affect all recent versions of Windows, of which the latter encompasses three separate vulnerabilities in Internet Explorer. Although at first this seems to be another case of 'install the patch and you're safe', this is no ordinary critical

Stuart Oakin reassures us there is limited risk to Microsoft customers.

>>IN OTHER NEWS...

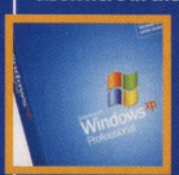
Microsoft hit hundreds of headlines this month.

LONGHORN

Microsoft's forthcoming OS might be delayed to 2007 and replaced by an interim Windows XP Second Edition. Gartner believes customers signed to the Software Assurance scheme expect at least one product update during their contract, and that Microsoft will release an interim XP to fill the gap.

WINDOWS LITE

There's a cut-down, low price version of Windows for the Thai government out, in order to combat the rising popularity of Linux there. Users elsewhere in the world have complained that they can't buy the same low price edition, and didn't MS state that you couldn't remove bits of Windows?



OFFICE 2003

Then there's the belated removal of Nazi symbols from MS Office. Microsoft has been receiving complaints about these since Office 2003 shipped with the Bookshelf Symbol 7 font, and an innocuous couple of swastikas were included. These were all removed in the last update.

HOT SPOTS>>
Must-see websites

ALEC'S CHOICE

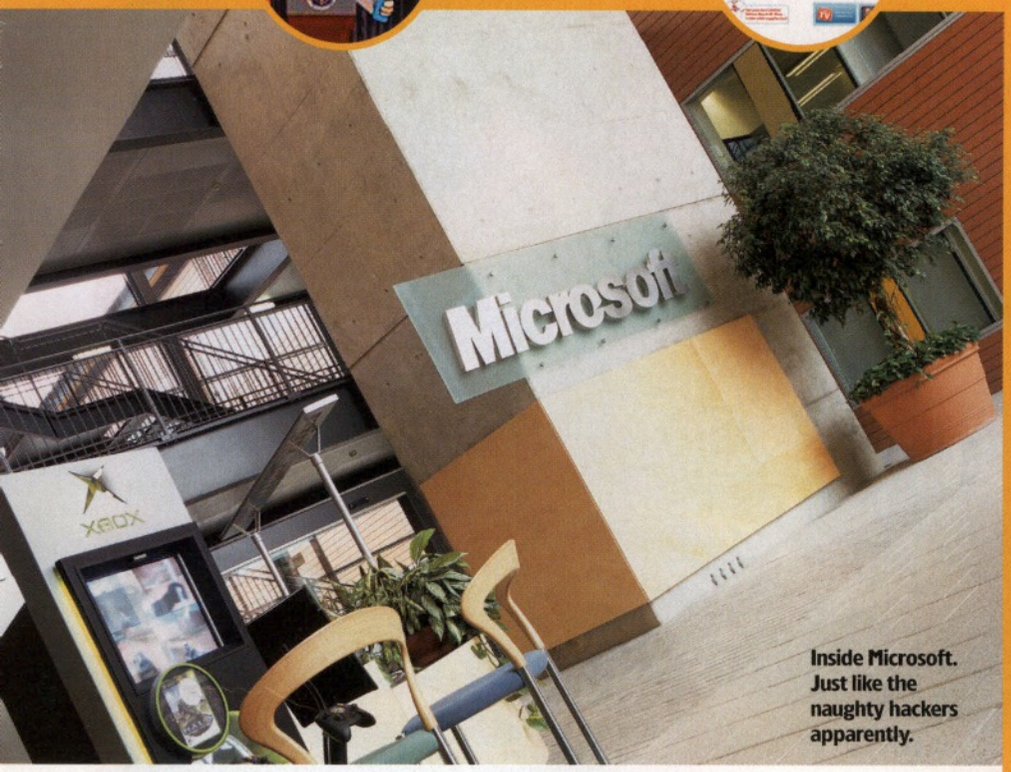
www.bushin30seconds.org
See the competition results to design the best commercial highlighting the problems with Bush administration.

DAN'S CHOICE

www.shardsoglass.com
Tastier than tobacco, and more deadly than cancer – it's a sure-fire winner!

ADAM'S CHOICE

www.e-michael.jp/gallery.htm
No idea why, but this Japanese site features pictures of pets shot through fish-eye lenses. Loads of them. Weird.



Inside Microsoft. Just like the naughty hackers apparently.

update: the most serious patch, involving Microsoft's implementation of the ASN.1 (Abstract Syntax Notation) system, fixes a vulnerability that was reported to Microsoft a full six months before the patch was issued.

If you're thinking, "Well, if they left it alone so long, it can't be that important," you couldn't be further from the truth – the vulnerability allowed remote code execution using system-level privileges on all affected Windows versions, including a fully patched Windows XP SP 1 system. That means hackers could install programs, read and edit any data, or create new system accounts at will.

eEye Digital Security, the company that discovered the ASN.1 vulnerability and reported it to Microsoft, maintains a list of other unpatched holes in software at **www.eeye.com/html/research/upcoming**. According to that list there are seven unfixed vulnerabilities in Windows, with literally hundreds of millions of exposed users – a potential security nightmare.

In the last few months, Microsoft's security policy has seemed to be shifting more of the blame for problems to end users and security providers. Last October, Bill Gates said, "You don't need perfect code to avoid security problems," citing firewalls and end user patching as better ways to ensure secure computing. Essentially, this new message is coming across as, 'don't trust Microsoft to keep your computer secure.' It may not sound fair but you should take responsibility for your PCs: our feature from page 20 shows you how.

During our interview with Stuart Oakin, he gave us this advice: "When you receive an email, even from a trusted source, that contains a link to a trusted website, don't click the link – manually type it in." Is this the future of Trustworthy Computing?

Only time will tell. In the meantime, you have little option but to patch, patch, and patch some more, which makes us wonder who would want the Windows source code in the first place. **PCF**

DEAD OR ALIVE

From the sublime to the latest Japanese version of *Dead or Alive Online* for the Xbox. This collector's edition is boxed with a special dakimakura (these are large pillows decorated with character's faces for those lonely Japanese businessmen to...) That's quite enough.

GOODBYE MR GATES

Still, it's not all bad news for Microsoft, as plain old Mr Gates was made Sir Bill by our very own monarch. Well, being a US citizen he won't be able to use the portentous prefix, but he will get a KBE for services to UK enterprise. So there you go, every cloud really does have a silver lining.

Incoming

Crate-loads of cool kit is currently coming your way. Crazy.

ViewSonic N2700w LCD TV

£TBC **www.viewsonic.co.uk**

As our monitor Supertest in PCF 158 revealed, we're pretty impressed by ViewSonic's current LCD output. But will the same quality extend to this lovely-looking 27-inch TFT TV? We're glad to see it's living room-sized, and the 25ms response time isn't bad for a product this big, but when oh when will LCD manufacturers learn that built-in speakers are always rubbish?

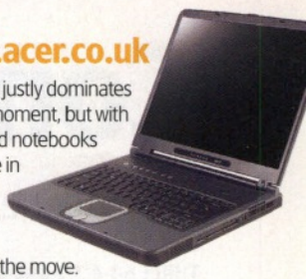
Creative Decoder DDTS-100

£120 **http://europe.creative.com**

Right, we do love having 6.1 or 7.1 speaker sets connected to our PCs for enormo-gaming audio. But we don't like that we have to fiddle around with linking the PC to a television or suchlike to use them for movie-watching. Fortunately, this reasonably-priced stand-alone decoder enables you to line the annoyingly proprietary wiring of Creative speakers to a DVD player, or a good half dozen other audio sources. It looks rather spanky, too – look out for a review next issue.

Acer Aspire 1500

£999-£1,299 **www.acer.co.uk**



Common consensus has it that Intel justly dominates the mobile processor arena at the moment, but with this, one of the first Athlon 64-based notebooks to trickle out, that monopoly may be in danger. With a mobile Radeon 9600 on board as well, this surprisingly well-priced laptop is something of a brute for gaming on the move. Bring on the FX-51 and Radeon 9800 version...

Lubic cases

£various **www.lubic.com.tw**

Now here's a novel approach to case-modding that all our fathers and grandfathers would approve of. It's basically Meccano, but designed to have a PC built inside it – specific sets for planes, towers and so on are available, but the joy on Dan Gril's face as he tried to construct a mecha-woman to hold his DVD drives suggests experimentation is where Lubic's strength lies.

Philips DA1000

£149 **www.philips.com**

Despite those awful adverts on the BBC, we're wholly convinced by digital radio. In an ideal world, it won't be long until MP3 players with DAB support (plus the ability to record it) appear, but in the meantime, the likes of the DA1000 do the job. It weighs only 100g and there's a FM tuner so you can use it in DAB signal-less areas.

Alright, alright...you can have the god damn parking space if you're that bothered.

↘ Games consoles

Console yourself

Specs for next-gen consoles from Microsoft, Sony and Nintendo hint at the future of the PC.

THREE 64-BIT, DUAL-THREADED processors – sounds like a recipe for *Quake III* framerates up in the thousands to us. Unfortunately, the first place such a concentration of processing power is mooted to appear is in Microsoft's sequel to its Xbox console (currently known as Xbox Next), rather than in desktop PCs – and even then, the wait may be until 2006. More startling yet, if the leaked specs are accurate, is that Microsoft has chosen to use IBM's latest PowerPC processors, currently seen in – heresy! – Apple's G5 Macs, rather than the Intel X86 chip in the original Xbox. True to form, Microsoft hasn't commented on the leaked specs as yet, and the final configuration is likely to be different – but they are almost certainly part of a current design spec.

Devil in the detail

If, as rumours have suggested, Microsoft has a substantial investment in a custom IBM chip, it could open the door to what is surely a long-term goal for the company – to be able to provide and sell standardised PC hardware, thus controlling everything from processor to operating system. With a lot of talk circulating that 2004 is going to be Linux's year, it would make perfect sense for Beelzebub Bill to now crank up his efforts to take even more control of the PC industry.

"Nintendo has aggressively quashed rumours that it is to bow out of the hardware market after GameCube has been unfairly branded a failure"

Of course, he'll also being trying to finally conquer the living room with his insanely powerful Xbox Next – although reports that it will only have 256Mb of memory and no hard drive, quells anticipation to a point. Fortunately, it's also purported to include an ATI graphics board, based on the R500 architecture, several steps ahead of the R420 due for PCs in the next few months. Given that R500 is probably only a year away, we wouldn't be surprised if Xbox Next was built around something yet more powerful. Embedded, dedicated DRAM will make high-res, HDTV rendering plausible, too.

Specs appeal

Meanwhile, Nintendo has aggressively quashed rumours that it is to bow out of the hardware market after GameCube, which has unfairly been branded a failure despite its massive success in Japan, by confirming it will be releasing a new console in 2005 or 2006. "Our machine will be ready at the same time as the other consoles," claimed spokesperson Yasuhiro Minagawa, fuelling possibly risible speculation that the new Nintendo's guts of an IBM processor and ATI graphics chip might be a rebadged Xbox Next. Meanwhile, any PlayStation 3 information remains scarce, although the recent debut in Japan of the PSX, a PS2 with a hard drive, TV tuner and DVD burner, suggests that convergence will be the watchword for Sony's next effort. Microsoft is said to be holding off on how much memory to include and whether or not to install a hard drive in Xbox Next depending on what specs the PS3 has – as with all things these days, it's apparently determined to have the most powerful console ever. No matter what. You got that?

But the good news for us PC hardcores is that none of these consoles are likely to appear until late 2005 at the very earliest, which means we should see a new heyday for our favourite platform, in which it is re-established as the clear leader in gaming technology. As more and more DirectX 9 games and high-end graphics cards appear, it'll spend at least a year putting the existing consoles to absolute shame. Now is our moment, comrade – make the most of it.

>>MP3 PLAYERS

LOCK 'N' LOAD MP3S

Make music, not war, with this bullets-for-tunes trade-off.

FOR THOSE OF US WHO CARRY AN AK-47 every day, life can get monotonous: the same old Russian design and rugged engineering. The rifle might be a reliable killing tool, but in today's information saturated world it just doesn't cut it. Enter this MP3 player which fits in the Kalashnikov's ammo clip from Audio Books for Free. The battlefield could soon be alive with the sound of Leonard Cohen.

"This is our bit for world peace," says ABFF's main man, Andrey Koltakov. "Hopefully, from now on, many militants and terrorists will use their AK-47s to listen to music and audio books." Seems implausible, since we all know camo-sprayed iPods are all that matters on the frontline these days. So, other than clipping into the magazine-port on the world's most popular assault rifle, what does the AK-MP3 offer the discerning tech-user? Well, it boasts 20Gb storage, re-programmable firmware, and the essential anti-shock protection. Needless to say this pseudo militaristic apparel also comes with USB 2.0, offers 10 hours of listening and has a built-in rechargeable battery. And all for $600 with 300+ audio books preloaded. (Or $350 if the gun-toting doesn't leave time for audio books.) Just don't choose the wrong clip in a firefight. It could get musical.

Next stop: digital cam land-mines.
www.audiobooksforfree.com

>>SPYWARE

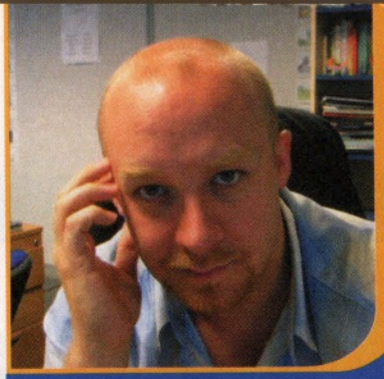
TIVO SNOOPING CHEEKINESS

They know what you watch, when you watch and how you watch it.

TiVo is revealing details of how its TV-grabbing system is being used to Nielsen Media Research, who will be taking great interest in how TiVo users go on to treat the programmes they watch. This could have significant ramifications for the television industry, because results could smash traditional models of how advertising is distributed. If people are skipping adverts and watching recorded Bagpuss episodes at five in the morning, TV marketing types are going to have to work out new ways of funding their programmes. Despite these possibilities for the future, the sample might currently be too small to be of any real use, because the tracked digital video recordings are simply a fragment of the one million TiVo sets that are currently in use in the US.

What naughtiness will your TiVo reveal about you? On second thoughts, we don't want to know.

Nevertheless, this research into TiVo has already come up with some startling pieces of data. Our favourite is that almost all of the 20,000 TiVos tracked during the last Superbowl were used to replay the section of the show where Janet Jackson had her right breast exposed by the naughty young Mr Timberlake. Now who could have predicted that, eh? **www.tivo.com**



Hardcore pawn

Steve Bristow hardens himself up for crunch time.

As I write this, it's about 2am and we have a major milestone approaching which may decide the future of our project. I've been on seven-day weeks for a couple of months now, but it's paying off and I'm very happy with the way the game is coming together. All of the theorising, brainstorming, paper design, technical innovation and artistic effort are starting to coalesce. Finally, that magic moment has arrived when we can see that the game is going to work, look great and, most importantly, be fun.

"That magic moment has arrived when we see the game is going to work"

I've been here before, and I know enough to savour this period, because when the real crunch comes, and we start beta testing and bug fixing, I'll look back on this as the easy part; when I got to go outside once in a while. That's when you really have to believe in the game. It takes more than professionalism to watch the sun rise at your desk and still feel that a game is important. Maybe insanity? The strange thing is, by the time it's all over and you see the fruits of your labour on a shelf somewhere, the predominant emotion is relief. After all that effort, it can be hard to see the finished product as anything more than a litany of missed opportunity. Still, the new game I'm working on is going to be the best thing yet, and if it isn't, the one after that will be.

STEVE BRISTOW
BLACK CACTUS GAMES
steven_m_bristow@hotmail.com

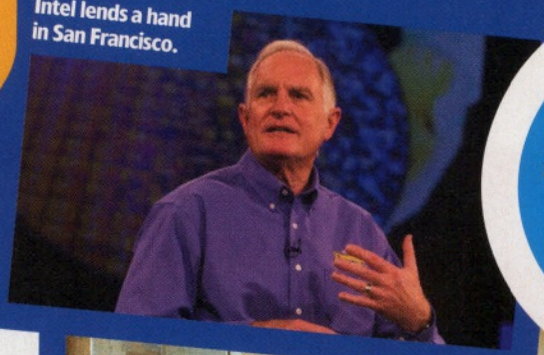
GRILL'S GRILLS

Tasty and nutritious gamer snacks to go!

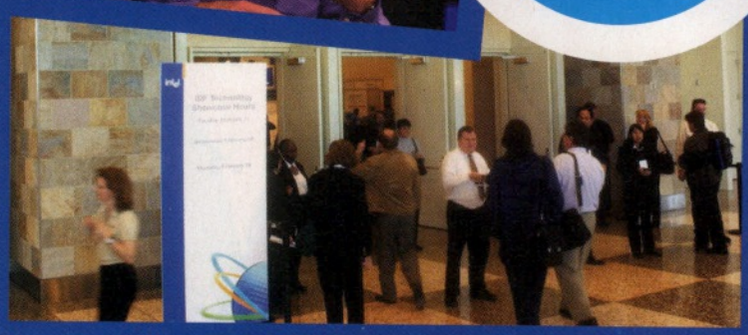
I was watching that Delia ont' telly last week, and her half-hour walkthrough oh boiling an egg. "I can do that," thought I. I couldn't. What else would be simple enough for a geek to cook?, I wondered. Southern fairy Jon Hicks then deposited a cup of what looked like tepid cat wee on my desk, and inspiration struck.

So here's how to make proper northern tea. Boil the kettle *(turn it on)*, **and when gurgling noises stop, pour into a mug. Throw in teabag. Mash said bag with spoon (or your fingers if you're 'ard). Add extra-fat milk, and drink with lip-smacking noises.**

INGREDIENTS
One tea bag
Mug
Kettle
Water
Gold-top milk
Teaspoon (optional)
Grit ***(optional)***


Intel lends a hand in San Francisco.

WORD OF THE MONTH
CURRY NETWORK
A well-maintained LAN – the odour of hundreds of curries eaten in the equipment room reveals the hours dedicated to its care.



>>INTEL DEVELOPER FORUM

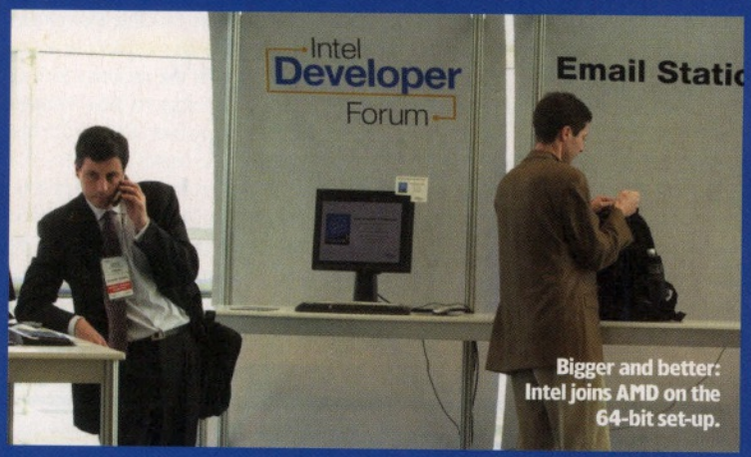
Intel's 64-bit technology

Hype, hoopla and humble pie in California.

IT'S SPRINGTIME IN SAN FRANCISCO and that can only mean one thing. No, not free love in Golden Gate Park, but the world's biggest geekfest, otherwise known as the Intel Developer Forum. All the usual Intel suspects made their customary keynote appearances, including CEO and old warhorse Craig Barrett, making possibly his final IDF appearance, and the firm's geek-in-chief and tech futurologist, Pat Gelsinger. Joining the Intel grandees were 5,000 attendees from over 50 countries and a 500-strong press corps, including an intrepid *PCF* reporter.

The big news, of course, was the announcement that Intel is joining AMD on the mainstream 64-bit bandwagon. The chip giant also confirmed what had long been rumoured – the recently released Prescott processor, which forms the basis of the latest Pentium 4 CPU, has hidden 64-bit extensions. 64-bit workstation and server versions of Prescott and its bigger-cached brother Nocona will be available in the second half of this year, but there was no word on when the 64-bit capabilities of desktop Prescotts would be enabled.

At least, this would have been the big news if Intel hadn't gone out of its way to play down the addition of this major new technology to its volume line of processors, presumably because its hand was forced by the success of AMD's 64-bit strategy. Intel executives denied that compatibility between its 64-bit line and the existing Athlon one was part of a 'new' cross-licensing agreement. Is it part of an 'old' agreement? We'll probably never know...



Bigger and better: Intel joins AMD on the 64-bit set-up.

>>WIRELESS NET

BRINGING WI-FI TO CAMBODIA

No phones, no mains electricity: no internet?

One of the most recent and commendable uses of high-tech kit sees the charity American Assistance for Cambodia and helpful tech boffins First Mile Solutions aiming to connect 13 rural Cambodian schools to the internet. Their method doesn't exactly make for high-speed browsing, but it's a clever step in the right direction. Motorcycles equipped with Wi-Fi tech are sent to drive by the schools on a regular basis, allowing for the delivery of emails to and from the school computers.

The system is unique, developed to use the motorcycle's battery to power the Wi-Fi system, and powering the school computers through the installation of solar panels. Key to the project is slashing the ridiculous prices that the local people face in a country where the government has a monopoly on all such technologies – normal taxation applies a hefty levy on their usage. By allowing numerous villages to benefit from this technology, the organisations involved are making budgets go further, and presumably allowing the first nonsensical spam to be delivered to the rural children. Joking aside, getting the net to the far corners of the earth is impressive – check out www.firstmilessolutions.com/cambodia

It's email, but not as we know it – 13 rural Cambodian schools join the race for faster communication.

>>UT2003

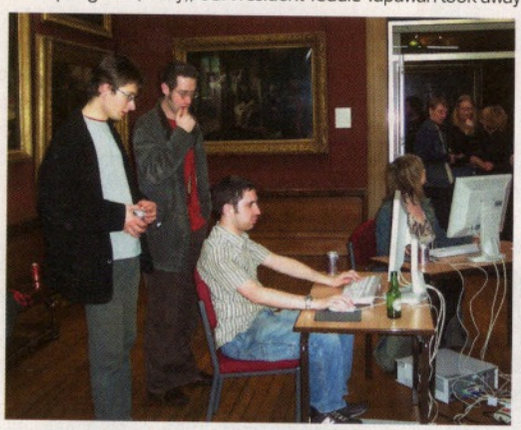
SHOOTING GALLERY

PCFormat gets all cultural – by putting games in an art gallery.

ON THE DISC

If there's one thing that can be said about us at *PCF*, it's that we've well and truly done our part towards corrupting the minds of the young. The latest instance of this was on a chilly February evening in Bradford, when Messrs Meer, Griliopoulos and Hicks journeyed north to Cartwright Hall Art Gallery (**www.bradford.gov.uk/tourism/museums/cart.htm**) to present prizes for an innovative competition we ran in issues 154 and 155. The challenge was to design an *Unreal Tournament 2003* level based on the gallery, blueprints and textures for which were provided by Steve Manthorp of Bradford council. "For me," explained Manthorp, "the purpose of the project was firstly as an audience development initiative: young people are the hardest demographic to get into museums and galleries, primarily because they haven't been there before. I saw the [*UT2003*] map as a way to give game players a knowledge of the gallery before they stepped over the threshold."

Springfield (really), USA resident Teddie Tapawan took away first prize of a Dell Dimension 8300 PC, courtesy of the Dell Outlet (**www.dell.co.uk/outlet**), while runners up Mark Morgan and Iain Smith took away a graphics card and an LCD monitor respectively. You can find the mightily impressive winning entry on our coverdisc this month. "The project has been a huge success for us," explains Manthorp. "We couldn't have bought the publicity with several years' marketing budget. The map has been launched to great acclaim, with over 5,000 downloads already. We also hope to strip out the gameplay elements of the map so that it could be used by schools and groups to plan visits."


Three prestigious *PCF*-ers judge the entries in the *Unreal 2003* level comp, based on the Cartwright Hall Art Gallery.

You're the jury

SUCCEED OR FAIL?

Making voice calls over the internet is hardly new but doing it without a PC is. BT's **Dave Axam** explained to *PCF* forumites all about the new service that will change telecoms for ever.

PCF What is BT Broadband Voice?
Dave Broadband Voice is the first consumer voice over internet protocol (VoIP) telephone service in the UK. It is a second line phone service, which allows a portable telephone line to be established over a broadband internet connection.

PCF Who is it available to?
Dave Broadband Voice is available to anyone with a broadband connection.

PCF Why is it marketed primarily to cable customers when BT only deals with ADSL?
Dave Broadband Voice is available to anyone with a broadband connection, whether it's via cable or ADSL. For cable customers in particular, though, it offers great calling rates.

PCF How popular do you see it becoming?
Dave VoIP has a great future. BT launched its Broadband Voice service as the first of its kind in the UK, because we believe it enables people to have an additional phone line at home at a low cost. This need for second lines is increasing, as more customers adopt calling packages that allow them to talk for longer.

PCF What's the difference between BT Broadband Voice and other software-based VoIP solutions for home users?
Dave Broadband Voice enables customers to make and receive calls in exactly the same way as a conventional telephone – by picking up the handset. The majority of other client-based VoIP services, however, are PC-based, so users have to boot up the computer before they can make a call. With Broadband Voice, there is no need for a PC – just a conventional handset and the adaptor box. **PCF**

>>YOUR VERDICT From the forums

Amacdonald I'm not entirely convinced it'll take off for home users but we use it at work and it's great. Definitely a pass.

David Way I think most people are happy using the established telephone systems they have now, and IMO having more than one number has its advantages. Sorry but my overall view has to be 'fail'.

MeTurk Sounds good, as long as you pay no more than 1p per minute. Sign-up and software should be free; the only reason everyone uses *Acrobat* is 'cos everyone else has it and it's free! Not that I could get it over my 56K connection – lazy government.

Nitrosoft Success. People already talk for free over MSN Messenger (not just writing but with mics and speakers as well). I shouldn't think it will be too long before phones like O2's XDA enable users to call for free in Wi-Fi hotspots using this technology.

YOU SAY... SUCCEED!

For the full interview and all your responses you can visit **www.pcformat.co.uk/mag/succeed160**

Diary

Things to do between stuffing your face with Easter eggs.

L – U – L – A, Lula 2 April

It's the day of Prussian sex today, with the release of Deep Silver's *Singles: Sex Up Your Life* and *Lula 3D*. *Lula* features (we can't believe we're printing this) "bouncing bosom technology" as Lula chases a bunch of kidnappers through exotic locations in exotic outfits. *Singles*, on the other hand, is *The Sims*, but with everything except the sex taken out. Awestruck teens should love them both, longtime. The emotionally mature should probably avoid.

Making tracks 2 April

Dirt tracks that is, with the head-to-head releases of *Colin McRae Rally 04* and *Richard Burns Rally*. Both promise outrageously real imagery, realistic physics and more exciting modes than Depeche, including "exhilarating online and LAN play", as the *CMR 04* press release has it. "Why don't you simply go for a drive outside?" ever cynical, our Jeremy says.

Beyond belief 9 April

Beyond Divinity, the sequel to last year's *Divine Divinity*, should be hitting the shelves in early April. Scripted by Rhianna Pratchett, Terry's daughter, it's lightning hack and slash action, and a witty script as good and evil fight it out.

PCFormat Redux 22 April

(Redux being zombie ducks, of course.) *PCFormat* returns, remoulded, revivified and full of more exciting elements than the periodic table. (If it was, like, dead exciting.) Expect a fantastic new design, the chopping of chaff, and more of the bits you like, and you won't be disappointed.

GOOD MONTH

COMIC BOOK ARTISTS A University of Minnesota report established that if Superman could leap tall buildings and Krypton had an Earth-like surface, the planet's density would have made it highly unstable – in other words it was destined to explode.

AMD The chip giant revealed that it made its first profit for two years in the last quarter, and celebrated by slashing the prices of all its chips.

BAD MONTH

FEELING FLUSHED In a *Robocop* moment, an automated superloo in the centre of Stafford detonated from a power surge. Thankfully, no one was hurt, but nearby traffic lights were destroyed.

BOSSES A study of intellectual property theft found that almost 70 per cent of people have stolen key information from work, and 72 per cent had no problem stealing info to help them in a new job.

PCFormat Investigates

Bandwidth hogs

PCFormat asks whether heavy users are pushing up the prices for everyone else.

You fat bastard. You pay a flat fee for broadband and leave your connection on for 24 hours a day downloading gigabytes of data. You probably arrive at the all-you-can-eat Chinese buffet with a wheelbarrow. The ISPs are on to you now, though; it's time to to cut down your intake or fork out extra cash.

According to the ISPs, the problem is that a minority of users are clogging the connections. "Many would find it surprising to see how much available bandwidth a small percentage of users can use," says Virgin.net's Alison Cleland. "And as the bandwidth is shared, their behaviour is to the detriment of the majority."

Meter beaters

Richard Brandon at Juniper Networks agrees, saying that many operators have as much as 60 to 70 per cent of their traffic generated by a small minority of their users. "For some time now, operators have been running their networks at an optimal level where they plan to have just enough capacity for peak traffic loads." This pattern of use is not sustainable, says Sebastien Lahtinen from broadband comparison site ADSLGuide (**www.adslguide.org.uk**): "If you are on an unmetered water supply, you will appreciate that if everyone in your city was leaving their taps running 24/7, there wouldn't be much water coming out of the tap."

So it's not surprising that ISPs are looking at ways of managing the traffic on their networks: NTL and Virgin.net have asked their customers to keep their data transfer to less than 1 Gb per day; BT has just announced a 1 Gb per month capped service.

Service charges

"The wholesale ADSL services were not designed and priced to support a high number of very heavy users," says Cleland. "In order to allow mainstream users to maintain the service levels they expect, it is inevitable that the heaviest users will have to pay extra, via one means or another, in the future." Rather than penalising heavy users, ISPs need to encourage subscribers to sign up for the service which best suits their needs, says Dr Jyoti Choudrie, operations director at the Brunel Broadband Research Centre, which is investigating the applications that will drive the successful uptake of broadband services across the UK. "Of course, many will opt for the most economical service, but if ISPs are very clear about acceptable uses and limitations, subscribers really will have little cause for complaint if bandwidth isn't always readily available."

As a heavy internet user, is it fair that you pay more for your connection? "Of course it is," says Brandon. "The alternative is that the lighter users will have to subsidise them. We wouldn't expect that to work for electricity consumption and nor should we expect it for using IP networks." **PCF**

Pigging out: working towards enough bandwidth for everyone. Hogs included.

© Corbis

>>THEY SAY

Opinions from the ISPs: are you eating more than you're paying for?

PHILIP WHALL

AOL UK (www.aol.co.uk)

"ISPs offering flat-rate access share the 'all you can eat' dilemma. Where consumption exceeds reasonable predictions, businesses must cut costs internally, limit consumption, charge by amount consumed or fail."

STEVE KAYE

V Two One (www.v21.co.uk)

"Heavy broadband users will have a major effect on the growth and price of ADSL services offered by ISPs...The knock-on effect of high usage is price, and contention ratios, which may have to be raised."

JAMES BLESSING

Zen (www.zen.co.uk)

"There's no real problem with bandwidth hogs apart from issues at local BT exchanges that have insufficient capacity to satisfy demand. BT plans to upgrade these exchanges but this will take time."

JOHN TSAI

Entanet (www.enta.net)

"An ADSL customer should be entitled to bandwidth they paid for and, in principle, broadband suppliers shouldn't impose limits. A heavy user should have a higher bandwidth connection with a lower contention ratio."

>>WE SAY

We're against the idea of metered internet access on principle, and to some extent, the problem of bandwidth hogs is down to the way broadband was initially promoted, as a means of encouraging people to move from dial-up. If a minority of people are responsible for using the majority of the bandwidth available, though, it does seems fair that they should pay more, as they are getting more. This could only work if prices fall for everyone else, though; those not using as much can then see that they have made a saving. Call us cynical, but we really can't see that happening, not in the foreseeable future, anyway. Cynical.

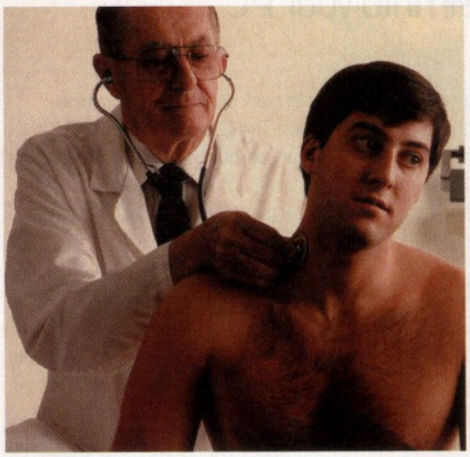
Future shock

WATCH THIS SPACE

The future is here. And **Dave Bradley** tries to look innocent.

Smart medicine

Nanotech drug delivery systems have been tested successfully.



Society is getting older and there is a corresponding increase in the number of cancer cases that doctors are having to treat each year.

THE DAYS OF INNERSPACE, the slapstick sci-fi movie where a miniaturised Dennis Quaid is supposed to be injected into a rabbit but actually winds up inside Martin Short, may not be that far away. Japanese biologists have started testing clever nano-medicines, smart drug delivery systems (DDS) that can target specific bad cells in the body. Work on lab mice has proved that it's possible to target diseased cells without damaging normal tissue around it. Described as missile drugs, the world's first successful DDS nano-particles were used by Dr Noboru Yamazaki and his team at the Medical School at Osaka University to care for a mouse eye inflammation. Preliminary patents have been taken out, and research continues into the recognition systems of the DDS. The team's plan is for this nanotechnology to be applied to the development of delivery systems for cancer and gene therapy treatments. Currently, these drugs do not require pilots, so Dennis Quaid will no doubt be pleased to know that, as yet, his skills are not needed: don't call us, Den.

www.aist.go.jp

COMET LANDSCAPE REVEALED

Who'd have thought those mini planetoids hurtling through space could have such interesting surfaces? This year, an unmanned NASA spacecraft, the 16-engined Stardust, zoomed into range of Comet Wild 2. It was able to fly unusually close to the core and send back pictures. Comet Wild 2 looks substantially different to our discoveries from Halley, perhaps due to it being a newer addition to our solar system. Although billions of years old, it was only pulled near to us by Jupiter's gravity in 1974. It is covered with boulders, cliffs and craters. Gaseous jets shoot out of active fissures on the surface, scattering vaporised ice and dust which the Stardust probe will collect – this material is likely to have been there since the formation of the solar system. But the craft won't make it back to Earth until 2006, so you'll have to wait until then for more news. www.nasa.gov/home/index.html

LOST IN TRANSLATION

You have to learn the idiom, not just another long list of foreign words.

Microsoft Research Asia has gone and built an English Writing Wizard, which will be shipped with Chinese versions of *Office 2003*. But this translation device, which not only deals with spelling and grammar but also manages some local turns of phrase, could be extended to European languages such as German and French. It's based on idiomatic usage, which is most difficult for a non-native speaker of any language to master. For instance, the Chinese for "turn on the light" could literally be translated as "open the light" which is tolerable, but stands out to a native English speaker as a rather stilted choice of words. Instead, the English Writing Wizard gives typists sensible word combinations. It can tell the difference between apparent synonyms that make no sense when used in unconventional circumstances, and thus goes beyond the traditional dictionary or thesaurus. During a *Word* grammar check, for instance, it will turn "thank you for the good present" into "thank you for the great present", correcting the user from a simple but stupid-sounding error. It all sounds great to us, and we can't help thinking that it would come in pretty handy for a few native English speakers we know...

http://research.microsoft.com

Retail therapy

Industry expert **Mat Bettinson** explains your consumer rights.

Whilst in my local computer shop, I noticed a gentleman who was looking for a TFT flat-panel monitor, but was adamant he didn't want any of "this dead-pixel nonsense".

Flat-panel displays often have unresponsive pixels which can be always on or off, and this man was unwilling to fork out £300 quid for a shiny new monitor and a dead pixel (fair play). Sadly, manufacturers only guarantee their units will have fewer than a specified number of dead pixels.

To solve the problem, the manager demonstrated the monitor in store.

Yet if you're one of the increasing number of punters who buy computer goodies off the web, a demonstration like this isn't possible. There is an inherent risk in buying goods mail order or online, and as a result the government enshrined specific consumer rights aimed at 'Distance Selling'.

What's does this mean? It means you have the right to cancel a distance purchase during the seven-day cooling off period described by the legislation. You need to do so in writing and return the products in an as-new condition; then you are entitled to a refund within 30 days: your right by law.

Many retailers, such as **Dabs.com**, are happily up-front about this legislation, believing it increases your confidence in purchasing. On the other hand, I mentioned these rights on another e-commerce operator's forums and was instantly banned and all mention was excised from the forum.

The problem, particularly with TFT displays, is that manufacturers won't allow the retailer to return the unit in such a way that they're left with second-hand stock. That's unfortunate but it's their problem, and is a cost of doing business on the web. Just as it was a cost of the time for that manager in the computer shop. Good on him.

Mat is the editor of the industry trade magazine, *PC Retail*.

MAT BETTINSON
retail.therapy@futurenet.co.uk

Need to know...

Welcome to our bite-sized buyers' guide...

>>BUYERS' ADVICE

How to buy a processor

Frankenstein would be proud. **Neil Mohr** helps prise a new brain into your PC.

So you fancy buying a new CPU? Congratulations, you've picked one of the most bewildering times to choose to upgrade your silicon-brained best mate. It may seem like a conspiracy, but right now both AMD and Intel are shifting their processor lines.

On the one hand, this is good, because it means lots of lovely new processors to play with. But, it's also sending shockwaves through the industry as new sockets and configurations are dropped on us from these behemoths' silicon foundries in the sky.

It may sound a bit personal, but what exactly are you planning to do with your new processor? Are you two planning to have a long love affair, sticking together through frag and respawn? Or is it to be more of a stop-gap 'wham, bang, thank you ma'am' drop-in fix? A straightforward processor upgrade, where the rest of the system remains the same, can be your cheapest option, but it's also the most limiting and least satisfying. If you're running an existing Socket 478 P4 or an Athlon XP Socket A system, the chances are that with a BIOS update, your motherboard could accept the latest Intel 3.2GHz or AMD 3200+ processor. Find your motherboard model and check the support page of its manufacturer's website for details.

Out of pity, if you have an older Socket 423 or, heaven forbid, Slot 1 PC, we can still help you out. Socket 423 P4s can have Socket 478 adaptors dropped in, while ageing Slot 1 PCs can have Socket 370 adaptors installed. Try visiting **www.upgradestore.co.uk** or **www.lynx.net.uk/totalmem** for more details.

Start from scratch

On the other hand, if you're willing to strip out your motherboard or build a system from the ground up, then the options can be bewildering. Starting with Intel, known as the daddy, there's the current choice of a Celeron P4, a fully-fledged P4 or the performance king – a P4 Extreme Edition. The Celeron at around £50 is well priced, but it's a P4 with a quarter of the cache – that's the one part that's crucial to the performance and it really hurts the Celeron's speed.

The P4, now having reached 3.2GHz, has shown itself to be a solid mainstream chip, and at £180 it sure ain't badly priced. If all-out speed is what you need, then the P4EE at 3.2GHz and 3.4GHz might catch your eye. This will run around 10 per cent faster than a similarly clocked P4 but will cost a staggering £650. At this point, things get a little complicated with Intel chips.

The new Pentium 4E is out, which has double the cache (1Mb), a longer pipeline and runs on a new process, but still uses a Socket 478 pin layout. However, it doesn't run any faster, so

"If you're thinking about an Athlon 64 system, we say hold on to your 64-bit horses."

>>POP IN A PROCESSOR

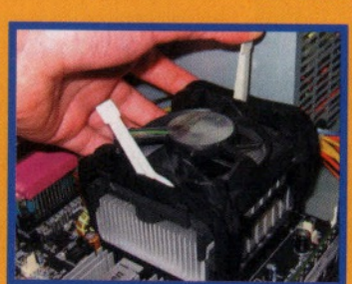
Who needs to know about sockets? Just take one processor, one hammer and...

POP IN THE CHIP

All processors use a Zero Insertion Force slot that lets you drop in the processor. To use it, lift up the lever that runs down the side of the socket, line up the processor's pins with those of the socket and drop it into place, pushing the lever back down.

PLACE THE HEATSINK

Time to add on the heat sink. It's normal for most heatsinks to come with heat compound already applied, but if not you'll need to add a little to the top of the processor. Place the heatsink on top and give it a little wiggle to spread this out.



CLIP FRAME INTO PLACE

Athlon XP and Socket 370 processors use the old-style heatsink clips that require a screwdriver to lever them into place. Pentium 4 and Athlon 64 use a system that clips on to a fixed retention frame, and two levers then clamp it into place.

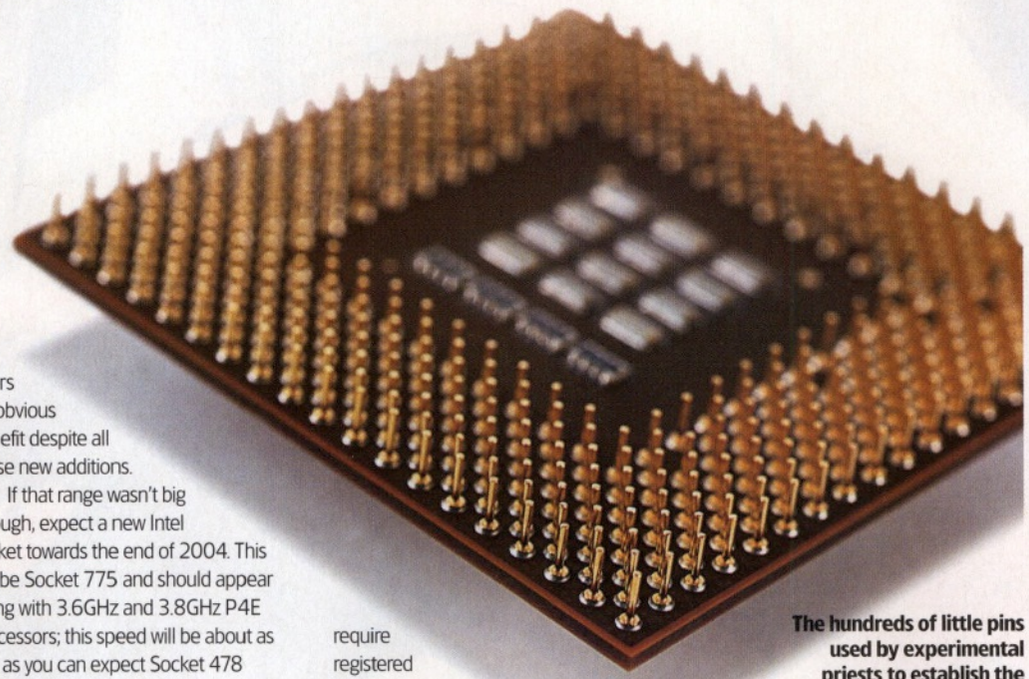
HOOK UP THE FAN

If there are problems with the levers check the heatsink is correctly in place and not caught on the frame. Finally, connect the heatsink's fan power cable to the motherboard's fan connector (marked CPU). Use a fan controller to reduce noise.

>> WHAT KIND OF PROCESSOR?

There's more chips here than a takeaway floor at midnight.

CPU	IDEAL FOR	WHY
Duron	Budget users	The lowest priced processor on the market, but even so it offers excellent power for the price.
VIA EPIA	Mini PCs	Only to be considered if you need a specialist box that has to run quietly or be very, very small.
Celeron	Intel fanboys	AMD's budget options do the nasty all over the Celeron; we wouldn't choose one.
Athlon XP	Price-conscious users	It's a tough call but the Athlon XP still offers the best mix of price and performance, but for how much longer?
Pentium 4/E	Mainstream users	The top-of-the-range P4 processors offer Hyper Threading and SSE2 all under the hood – handy extras, if they get used.
Athlon 64	Hardcore users	If you want a cutting-edge, futuristic looking PC, the Athlon 64 is the only place to go.
Pentium 4EE	Kids with rich parents	The Pentium 4 Extreme Edition is more than likely the fastest processor on the block, but you've got to own a house clad with gold to be able to afford one.



The hundreds of little pins used by experimental priests to establish the maximum number of angels, once and for all.

offers no obvious benefit despite all those new additions.

If that range wasn't big enough, expect a new Intel socket towards the end of 2004. This will be Socket 775 and should appear along with 3.6GHz and 3.8GHz P4E processors; this speed will be about as fast as you can expect Socket 478 processors to go.

AMD's line-up is just as mixed. The stalwart of its range, the Athlon XP, has peaked speed-wise with its 3200+ model; this is the end of the line for both Socket A and the Athlon XP. Thankfully, most Socket A motherboards should be able to use these processors with the right BIOS update.

64 bits on the wall

If you're thinking about investing in an Athlon 64 system, we say hold on to your 64-bit horses as it's all change in camp AMD. The current Athlon 64 and Athlon 64 FX models, which respectively use Socket 754 and Socket 940, are both going to be replaced with the new Socket 939. This will be used ever onwards for both ranges. Holding out for this means you'll have a simpler processor upgrade path in the future.

The new socket will also usher in an updated version of the FX that doesn't require registered DDR memory, which the current Socket 940 models use. Registered DDR memory is more expensive than standard DDR memory and it's also slower, so there are two more reasons to wait a while.

Just to make sure we're left thoroughly confused, Socket 754 will survive, but it's going to be reserved for a new line of budget processors based on the Athlon 64. This new processor will replace the ageing Athlon XP as the entry-level processor. Sounds tempting, but it'll only be 32-bit. Expect to see these around in the late summer.

VIA is here

On to VIA. (Yes, there is actually another processor manufacturer.) VIA produces the VIA C3 available as a standard Socket 370 processor and, more interestingly, integrated into its EPIA micro-ITX system boards. Running at up to 1GHz, these sound fast but because of a very poor floating point pipeline, the processors in general run pretty slowly and aren't good for games or other maths-intensive applications.

The main draw for the EPIA is its small form factor and low power consumption, allowing it to be used in small, quiet systems. Plus, it only costs around £120 for a motherboard and processor. Take a trip to **www.mini-itx.com** to find out what the EPIA can accomplish. **PCF**

NEXT MONTH BRAND NEW EIGHT-PAGE BUYERS' GUIDE

BEST BUYS

The best deals on the hottest processors

DURON 1.6GHZ

£27 www.dabs.com

Clearly the best budget processor on the market, we thought it was dead but the Duron lives on... just. Running at a real 1.6GHz, it offers good performance at a pocket-money price tag.

VIA C3 1GHZ

£32 www.komplett.co.uk

If you want a Socket 370 processor, there are a few Pentium III processors available as well as the VIA C3, which, even at 1GHz, runs incredibly slowly, thanks to a poor floating point pipeline.

CELERON 2.4GHZ

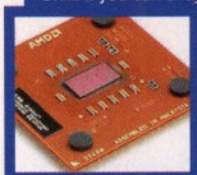
£50 www.komplett.co.uk

The best value Intel processor on the market. Running at 2.4GHz, it sounds fast but the 128Kb of cache leaves a lot to be desired. On the plus side, coupled with a low-cost motherboard, it makes a cheap PC.

ATHLON XP 3200+

£152 www.aria.co.uk

The fastest and more than likely the final Athlon XP model to be available. Sniff. If you currently own a Socket A motherboard, this is the end of the line for your PC, so don't hold off for too long.



PENTIUM 4 3.2GHZ

£210 www.aria.co.uk

So you have the standard Pentium 4, the Pentium 4E and the Pentium 4EE to choose from. They all run at 3.2GHz, they're all priced differently and they're all technically different. Nice one, Intel.

ATHLON 64 3200+

£219 www.savastore.com

The entry-level way to 64-bit processing – shame there's not much to run with it just yet. Priced right against the P4, it's a tempting buy, particularly looking towards a 64-bit *HL2* and *Doom III*...

PC CD-ROM
BATTLEFIELD
VIETNAM
16+
www.battlefieldvietnam.ea.com
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gamespy

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WITH .50 CALIBER SHOWERS LIKELY.
EA GAMES
Challenge Everything
THERE'S HEAT, HUMIDITY AND HALF A MILLION VIET CONG BETWEEN YOU AND VICTORY. TOUGH IT OUT ACROSS JUNGLES, RIVERS AND BEACHES. BATTLE FROM THE HO CHI MINH TRAIL TO THE STREETS OF HUE. COMMAND F-4 PHANTOMS, PBR RIVERBOATS AND M551 TANKS. AND KEEP YOUR HEAD DOWN, BECAUSE THE NVA'S PACKING SOVIET T-54 TANKS, MIG-21S AND MI-8 CHOPPERS.
WELCOME TO THE JUNGLE.
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HACKED IN 52 SECONDS

A new PC can be broken into in less that one minute. So why, asks **Martin Coxall**, do so few of us adequately protect ourselves?

A cursory glance at the more sensationalist national dailies might lead some to conclude that the internet is untenably dangerous; a digital virtual Mos Eisley, a hive of villainy in which hacker scum lurks in the cybershadows, perpetrating terrifying acts of electronic terrorism against decent, right-thinking folk everywhere. For those of us who are rather fond of the internet, such hysterical scaremongering and unchecked propaganda can appear as a misanthropic attempt to perpetrate some anti-technological agenda.

That's no excuse for complacency – every once in a while it pays to remind ourselves what the real risks are and how we can limit them. Within the first few months of 2004, for example, we've seen several high risk viruses hit the global headlines and one particularly serious security hole in Windows bought to light.

A plethora of degenerates and ill-wishers really do litter the dark fringes of the internet, wearing the costumes of hackers, spackers, scammers, kiddiez, 133t freakz, fraudsters and spammers. They exist, albeit perhaps not quite as in a tabloid journalist's fevered imagination. And we've all been bitten by worms, Trojans and spyware at least once in our online lives. Yet what do most people do to protect themselves? Nothing.

There are many different types of security flaw: there are the so-called exploits in which a carelessly-written program allows a

MAKING WINDOWS SAFER

This being Windows, it's never going to be completely safe, but you can help.

If you wish to make Windows significantly more safe than it is when it comes out of the box in its virginal state, you'll need to expend some effort, and possibly money, to acquire some extra software, such as a decent firewall and a virus-filtering system. Here are a few recommendations.

FIREWALLS

ZoneAlarm (www.zonelabs.com): This package is on our coverdisc, and is widely regarded as one of the best firewall programs for Windows. It's extremely easy to use and configure, and there are very few settings to tamper with. In the default mode, it will allow no access in, and little access out.

Norton Personal Firewall (http://symantec.com): Another popular Windows firewall, this one isn't free for home users. It is fairly powerful yet remains easy to use, and operates in much the same way as *ZoneAlarm*. It also now includes anti-spam filters.

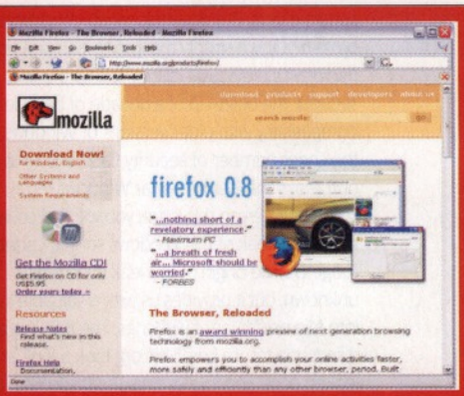
ANTI-VIRUS SOFTWARE

Norton AntiVirus (http://symantec.com): Part of *Norton Internet Security* suite. This is one of the original and best anti-virus software packages on the internet. It scans email and all other files and can remove viruses, worms, and Trojan horses.

McAfee VirusScan (http://uk.mcafee.com): Another ridiculously popular anti-virus system. It can currently recognise more than 67,000 known viruses and records over two million installations worldwide.

INTERNET EXPLORER AND OUTLOOK EXPRESS REPLACEMENTS

Internet users of the world unite, and throw off your shackles. You don't have to suffer the ignominy of using Microsoft's ageing and insecure web browser and mail client any more. *Mozilla Thunderbird* (the brand new mail client) and Mozilla Firefox (the spanking new web browser) form the holy duopoly of Internet Explorer and *Outlook Express* replacements. You can download them both from **www.mozilla.org**.



Mozilla Firefox: the browser for a new generation.

malicious user on your system to gain elevated privileges; there are email scams which use programming errors in Internet Explorer to convince people to divulge credit card information; there are user-perpetuated worms and viruses like the recent MyDoom outbreak. These examples are but a teeny selection of the ways in which your PC and its data can be hacked, prodded, tricked, crashed and generally compromised.

Different security flaws are all exploitable in different ways and take advantage of different weaknesses and oversights, so there is no one thing we can all do to guarantee our security. For example, a buffer overflow exploit takes advantage of a programmer oversight to gain control of your machine, whereas the recent Internet Explorer URL vulnerability and ensuing credit card scam is used to trick an unwary user into thinking they are visiting a legitimate website, long enough for them to hand over their complete financial history to a team of Romanian script kiddies.

Ignorance is bliss

The consequences of being exploited or otherwise scammed are frequently unpleasant, from having to reformat your hard drive and reinstall Windows, to losing thousands of pounds through fraudulent credit card transactions. Perhaps even more alarming, though, are attacks that are invisible to the user. You may not be aware that you have fallen victim to an exploit. For many people, there is a significant possibility that your PC is currently being used by spammers and possibly other scammers, and yet you remain blissfully unaware.

Tabloid hysteria knows no bounds, and of late much has been made of identity theft. Identity theft is, of course, not a new concept, but it's one that has gained a new-found popularity because of the myriad insecure systems and communications channels of the internet. The term is used to refer to any type of criminal behaviour in which some scammer secretly obtains, and then attempts to use, another person's personal data, good name and reputation in some way that involves fraudulent conduct or deception. Naturally, this is done for financial gain typically. Because of the anonymous, non-regulated nature of the internet, it has in recent years become an attractive means for criminals to obtain this identifying data, from personal passwords to banking and credit card information. It has been know for identity thieves to gather huge amounts of personal data on a single, unwary individual. Once personal information becomes available to someone else, it's possible for them to indulge in significant amounts of mischief, impersonating the victim to conduct other secondary crimes, from false loan and credit card applications to obtaining information regarding passports or mortgages.

"Identity theft is not a new concept, but it's gained a new-found popularity because of the myriad insecure systems of the internet"

Before you start thinking 'hypocrites', having read the earlier rants about tabloid scaremongering, bear in mind that these things have and do happen. You're not special, despite what your mother may tell you. It may not be that likely, given the vast number of people who regularly grace the internet with their, but since it has happened to a significant number of 'them', it could happen to you.

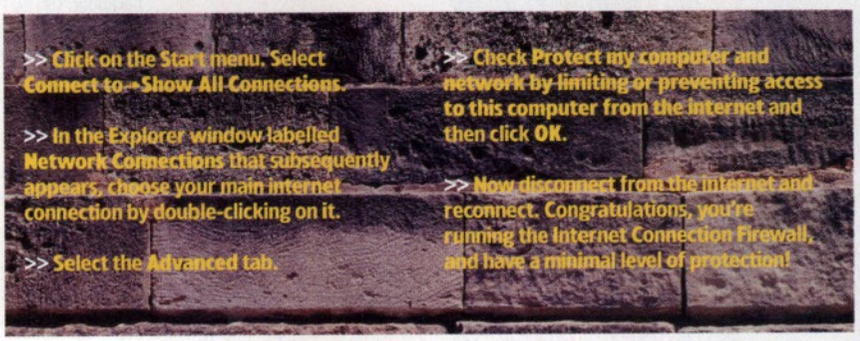
Fortunately, there are a number of sensible precautions that you can take to reduce the likelihood of identity theft occurring, much of which falls in the common sense category. Be conservative about what personal data you give out and to whom. Check bank and credit card statements regularly and look for any unusual transactions. Keep detailed records of all online transactions. If you follow these simple precautions, then you will greatly minimise the chances of being an unwitting victim of identity theft.

The question is often raised of whether Windows is in some way broken or inherently insecure by design (for example, in *PCF*157). There are certainly a number of long-standing fundamental security landmines residing in Windows, waiting to blow the legs off any stray program that isn't paying sufficient attention to the lie of the

>>AND AFTER ALL, YOU'RE MY FIREWALL

As you well know, a firewall is a piece of software that monitors your network connection and denies all connections that did not originate with a request by your computer. Firewalls are a minimum requirement for basic internet security, especially if you have a broadband connection. The Internet Connection Firewall is the default firewall software provided with the Windows XP operating system. It is a rather simplistic stateless firewall, and there are better commercial alternatives. However, it is available as standard on all versions of Windows XP, and works well enough to provide adequate security for most Windows users.

By default, the firewall is turned off on current versions of Windows XP. Come Service Pack 2, which is scheduled for release in the summer, this will change, and the software will be greatly improved. If you've not got a better alternative, follow the simple steps on the right to enable the Internet Connection Firewall on an internet connection in Windows XP.


>> Click on the Start menu. Select Connect to > Show All Connections.
>> In the Explorer window labelled Network Connections that subsequently appears, choose your main internet connection by double-clicking on it.
>> Select the Advanced tab.
>> Check Protect my computer and network by limiting or preventing access to this computer from the internet and then click OK.
>> Now disconnect from the internet and reconnect. Congratulations, you're running the Internet Connection Firewall, and have a minimal level of protection!

software land. But does this mean Windows is broken? Or is it simply the impression one gets from Microsoft's previously laissez-faire attitude to security, the build-up of a decade of backwards-compatibility with older versions of Windows, and the sheer number of security flaws and virus outbreaks that seem to mar Windows?

Elsewhere in this issue, you will find coverage of the recent leak of the Windows source codebase (page 8). The origin of this leak is currently unknown, but it provides us with a valuable insight into Microsoft's inner workings. The popular geek discussion forum kuro5hin.org took a look at the leaked code and found, to its great surprise, that given the size and history of the Windows codebase and the Microsoft attitude to security, the code is actually rather clean, well-written, and generally does most of the things considered good practice.

Dudes, not drones

So, if Microsoft's programmers are rather good, instead of the incompetent, barely-conscious Borg drones of internet folklore, where does all this security wrongness come from? Consider the phrase 'desktop penetration.' Steady now, it's not what you think – this isn't that kind of magazine. In fact, the term refers to the proportion of desktop PCs that run a particular operating system. At last count, the scores ran something like: Windows 95%, Linux 2%, Mac OS X 2%, everything else 1%. Those with an advanced qualification in mathematics will immediately recognise that this means there are significantly more Windows machines out there than any other desktop operating system.

Put yourself, metaphorically, in the position of a hacker. If you want to cause maximum carnage, then weight of numbers would logically suggest you direct all your devastation at Windows users. If you do this, you're far more likely to achieve the most widespread fallout, with accompanying media interest allowing you to snigger with your associates at the misery you have unleashed, if that is your sociopathic desire.

So, is sheer numerical dominance the only reason that Windows users are the victims of most desktop exploits? Is Microsoft the victim of its own anti-competitive behaviour/abuse of monopoly/success? (Delete as appropriate.) Is the humble user just an innocent little bunny trapped in the headlights of an oncoming capitalist juggernaut, where the truck itself is being tailgated by an entire convoy of hacker-drivers, angry that the lorry driver cut them up at the lights? No, in both cases. Windows' dominance may be a factor in the preponderance of attacks against it, but this does not release Microsoft or the user from their own complicity in the world of email viruses and Internet Explorer exploits that surrounds.

Pay attention!

You there. Yes, you, PC user. You're a bit thick. Yes, you are. We don't care that you have A levels and watch BBC2. But, you say, we haven't met – how can you know this? OK, if you claim that you're not thick, explain this: why, even after repeated warnings, do you keep double-clicking on email attachments from people you don't know in *Microsoft Outlook* or *Outlook Express*? How many times have you heard self-anointed security experts informing you of the folly of doing so? And yet, you still do it. You have to admit, that's a bit thick.

Perhaps it's not you that does it. Perhaps nobody does. How, then, do we explain the recent outbreak of the MyDoom worm? MyDoom went off like a bloody rocket and spread its unwanted payload to Windows PCs across the globe hundreds of millions of times. But this didn't happen automatically – even Microsoft realised the security

You may find your hands are tied if you fail to take adequate security measures.

>>THE RISK YOU FACE WITH WINDOWS

Paul 'h4x0r' Hudson walks us through a common Windows attack...

10 SECONDS Scan for Windows machines: Scan local network with NMAP to find all Windows machines on network running Win2000, XP, or 2003.

15 SECONDS Pick victim and confirm vulnerability: Pick one machine, and run test to ensure DCOM is enabled.

20 SECONDS Send buffer overrun: Send malformed request to victim that causes a buffer overrun in the Remote Procedure Call (RPC) service.

25 SECONDS Execute backdoor: Send code to execute – in this case it's a backdoor to allow us to get a command prompt from elsewhere.

27 SECONDS Access user's data: With full control over the machine, we can delete, create, or view any files we want, or even execute commands such as Format or Fdisk.

30 SECONDS Install backdoor: Use the FTP command to connect to the server and download a backdoor in case we want to come back into this PC later.

40 SECONDS Install sneaky batch file: Place batch file in Startup folder to cause automatic system reboot when the system boots.

50 SECONDS Send new buffer overrun: Close connection and reconnect to port 139 (Windows communication port). Send malformed data that Windows handles incorrectly.

52 SECONDS Send into reboot vortex: Windows box crashes and automatically reboots, then runs the Startup batch file, causing it to reboot continuously with no explanation.

TOTAL TIME: 52 SECONDS

DAMAGE DONE: Complete control over machine, read and deleted any files, then made it reboot continuously, effectively rendering it useless.

CONCLUSION: Making Windows reboot, even if it was patched just a few months ago, is a cinch, but getting control over the machine sometimes requires a little more work.

The latest nForce 3 boards from nVIDIA have on-boards firewall for top protection.

"The MyDoom worm went off like a bloody rocket and spread its payload to Windows PCs across the globe"

implications of having *Outlook* open attachments automatically. It spread because millions of *Outlook* users were running the binary attachments from people they didn't even know. Yet, because the email was a 'front' email, designed to entice people into opening the attachment with alluring subjects like 'I hope this isn't true', 'You should see this' or 'Whoops goat nipple', their excitement glands overruled their rational brain centres, and 24 hours later the internet had an epidemic on its hands.

OK, we apologise for the accusation – you aren't a bit thick. But there surely must be millions of people out there who are. That would certainly make it easier to understand why social engineering attacks like MyDoom work so effectively. Social engineering is an umbrella term that refers to any of a class of non-technical techniques that involves tricking other people to break normal security procedures. Tricking an email reader into clicking on an attachment from someone they don't know, using suggestively written subjects, messages and attachments is a shining example of social engineering at work. Appealing to vanity, threatening with authority, or a judicious helping of wacky or pornographic-sounding attachments often does the trick.

Many security experts still suggest that the easiest way to put a stop to social engineering is education, to get the information across so that good sense doesn't go out the window with every attachment. Mind you, we've been saying the same thing in these pages to hundreds of thousands of people over the years.

The omens aren't good. Microsoft patched *Outlook* and its diminutive sibling, *Outlook Express* three years ago. So, in addition to ignoring repeated desperate pleadings from security experts, those people, with their itchy attachment-clicking finger, also haven't quite got round to upgrading their antediluvian software in three years.

Back to school

So is further education the answer? Partially, yes. An ongoing process of education needs to continue to make clear to everybody with a PC the universal truths of security: upgrade the software on your computer regularly, and always remember that clicking on attachments from unknown sources is a

>>ARE YOU BETTER OFF WITH LINUX?

And then he does the same to Linux. Which is 18 seconds safer.

10 SECONDS Scan for Linux machines: Scan local network for all Linux machines with Secure SHell (SSH) port open.

15 SECONDS Pick victim and confirm vulnerability: Pick one machine, and run test to ensure vulnerability is open.

20 SECONDS Run exploit script: Send malformed information to the SSH server and reset the administrator (root) password to Z1ON0101.

25 SECONDS Connect to server: Use SSH to connect to the server as root, giving us complete control over the server.

30 SECONDS Install backdoor: Add a new user for our own user. Working as root is often obvious to the legit system administrator, so it's best to create a user with an innocuous-sounding name.

40 SECONDS Reconnect as new user: Go back in as our backdoor user, and read/edit/delete all the files we want.

43 SECONDS Install backdoor: FTP to server and download a backdoor in case we want to come back later.

No exact OS matches for host
Nmap run completed -- 1 IP address (1 host up) scanned
Connecting to 10.2.2.2 ssh ... successful.
Attempting to exploit SSHv1 CRC32 ... successful.
Resetting root password to "Z1ON0101".
System open: Access Level (0)
ssh 10.2.2.2 -l root
root@10.2.2.2's password:

53 SECONDS Clear log files: Erase any mentions of our presence on the system to make back-tracking more difficult (log files are much more detailed on Linux than on Windows).

1 MINUTE 10 SECONDS Disconnect: The log files are cleared, so bail out before we get noticed.

TOTAL TIME: 1 MINUTE 10 SECONDS

DAMAGE DONE: Complete control over machine, read and deleted any files, installed backdoor for later, erased log files so we can come back later.

CONCLUSION: Hacking Linux is a lot harder than hacking Windows, but nonetheless possible if you can find older machines that haven't been patched for a while.

OK, Trinity might have hacked Linux faster, but we're better looking – honest.

MORE SECURE ALTERNATIVES TO WINDOWS

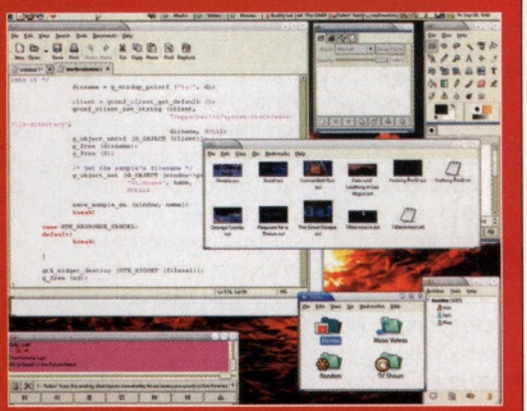
Windows isn't the only OS.

There are other desktop OSes if you're concerned about the security implications of using Windows. The approach each one takes to security updates and how easy they are to update are key concerns.

DEBIAN GNU/LINUX (www.uk.debian.org)

Linux is widely viewed as being a more secure desktop operating system than Windows, a great deal of which is attributable to the open source nature of its development. This means that, as Eric Raymond suggests, security holes get identified more quickly and more often than they are with Windows.

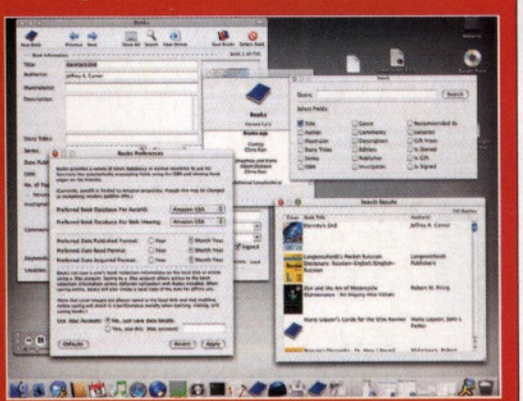
There are many distributions of Linux, but one of the most respected and fastest growing is Debian. What makes Debian special and so widely loved, especially by systems administrators concerned by security, is quite how easy it is to keep every piece of software up to date. Online remote upgrades can be achieved by typing two simple commands: 'apt-get update' and 'apt-get upgrade'. By doing this, every single one of the thousands of software packages on your system that is out of date will be upgraded automatically. By running these commands regularly on a Debian machine, you would need never worry again about having unpatched and insecure software.



Ooh, it looks just like Windows.

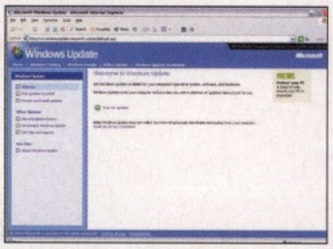
MAC OS X (www.apple.com/uk/macosx)

Mac OS X isn't really a replacement for Windows, of course, since you can't run either Windows on a Macintosh or Mac OS X on a PC. But if you're considering buying a new PC in the near future, and are also concerned about issues of security, you may wish to consider getting an Apple Macintosh with Mac OS X. Like Linux, Mac OS X builds upon the ancient (in computing terms) traditions of UNIX. These traditions include having most users running as non-privileged users, so that users and viruses alike cannot cause the kind of rife destruction witnessed with a mild ennui in the world of Windows on a daily basis. Like Linux, the kernel is also free software, and there is a software updater available. Debian's 'apt-get' command is even available for OS X through the Fink project, found at **http://fink.sourceforge.net**.

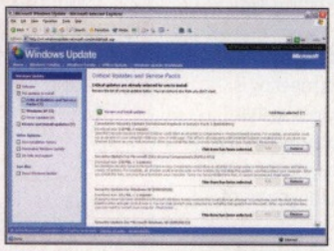


Ooh, shiny.

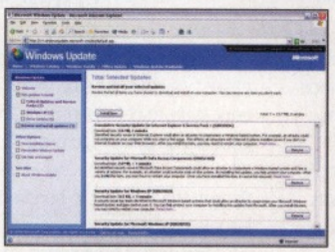
>>WINDOWS UPDATE Run Windows Update at least once a month to aid Windows' security.



01 SCAN FOR UPDATES
Click on the **Start menu**, then select **Windows Update**. The Windows Update main page will open in Internet Explorer. (It will not work in any other browser.) A dialog box may pop up asking permission to install the Windows Update ActiveX control. Click **Yes** and the software will be installed. This may take a few minutes over a modem connection.



02 CHOOSE YOUR UPDATES
Select **Scan for updates** and wait for Windows to tell you which software on your PC needs updating. Choose the updates you would like to install. They are divided into categories: Critical Updates, Recommended Updates and Driver Updates. The critical updates will already be selected, but you may wish to check the other categories.



03 CONFIRM AND INSTALL
Once you have chosen the software you'd like to update, click on **Review and Install Updates**. This will take you to the final page of the Windows Update wizard. When you are ready to go, click on **Install Now**. You will be asked to agree to some licenses, and then the download will begin. This will probably take a long time, several hours over a modem.

Windows Update -- Web Page Dialog
Windows Update is downloading the updates to be installed on your computer. Please wait.
Cumulative Security Update for Internet Explorer 6 Service Pack 1 (KB832894)
Download progress:
448 KB/13.7 MB
Download time remaining:
5 minutes
Install progress:
Cancel

04 WAIT THEN RESTART
When the downloaded updates have been installed, restart your computer. That's it! You're now up to date. You should have all-new versions of outdated Windows software on your machine, including patches for security holes. If you run Windows Update regularly you will significantly reduces your chances of falling foul of a security scam.

Very Bad Thing. And it needs to continue until everyone starts to listen. However, education may not be the whole solution. Certainly, there is more that hardware and software manufacturers can do. Maybe it is also time that Microsoft stopped supporting old versions of its software, so people have no choice but to upgrade.

Perhaps the problem is that many people don't yet view computing as a ubiquitous part of everyday life. The internet still has a novelty value that allows people to believe the responsibility for their security must lie with somebody else. It doesn't. Ultimately, the responsibility has to lie with the user.

Free the source, man

The free software and open source movements have a very different take on the issue of source code availability from Microsoft. Whereas Microsoft has always taken great care to ensure that its source code remains completely secret, open source operating systems such as GNU/Linux maintain that the source code must remain free, and available to the users of the software. Eric S Raymond wrote in his essay on the philosophy of open source software, *The Cathedral and the Bazaar*, that "given enough eyeballs, all bugs are shallow". He is referring to what many see as open source software's main security advantage: because anyone can view the source code of a piece of software, developers can constantly look for bugs and fix them. Assuming a sufficiently broad cross-section of expertise in the developer community, programmers with specific strengths can look for complex and esoteric bugs and fix those others might miss.

Proprietary software doesn't have this advantage. The code is known (give or take an unauthorised leak) to only those within the software company. There could be hundreds of unfixed security vulnerabilities in Windows, and because of the proprietary nature of the source code, unless Microsoft decides to announce it and fix it, you may never know it exists. Potentially, the first you will ever know of a security vulnerability in a piece of Microsoft software will be when an exploit is developed by a hacker, and script kiddies unleash it on the internet.

Given the proprietary nature of Windows, then, can it ever truly be trusted by those that have not seen the source code? Quite possibly not. This will continue to be an issue for Microsoft, especially in its dealing with governments. From a government's point of view, the inability to know the precise nature of the security vulnerabilities in a piece of software is a serious risk to national security. It's no surprise then that governments are among some of the major organisations experimenting with using Linux on the desktop.

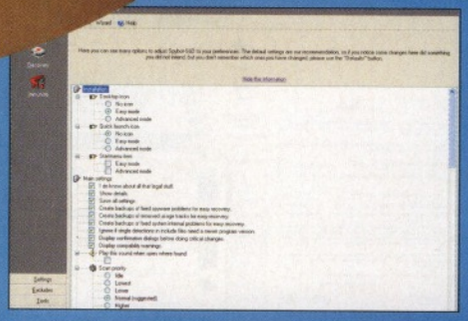
Corporate criteria

Microsoft's response to this very real threat to its core business has been to launch its 'shared source' initiative, which gives limited access to the Windows source code to governments and many other of Microsoft's most valued partners. From its perspective, this is a sensible move, as it should allow large investors in its software to feel more confident about the security of their chosen platform. Will this fix many security problems in Windows? Possibly. And possibly not. It may only serve to invoke some resentment about having to do security auditing work for Microsoft that it should have done itself, and then having to pay Microsoft for the privilege.

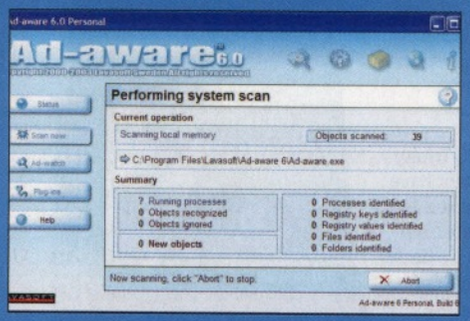
Microsoft has seemingly paid little more than lip-service to the notion of security for far too long. A search on Google for '+Microsoft +security OR +privacy +flaw

THE COMPLETE SECURITY TOOLKIT

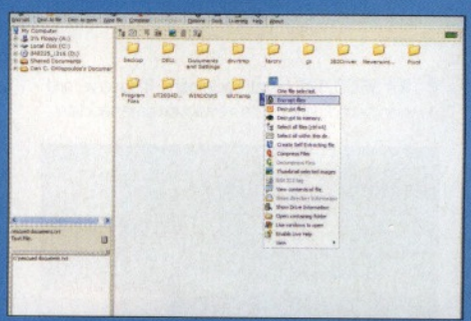
There are 20 top applications on your cover discs for protecting a Windows PC



Spybot Search & Destroy will reduce the hardiest bug to its essential binary components.



Ad-aware detects thousands of different spyware applications, and removes them from your PCs.



MaxCrypt conceals your files better than a concealed badger, who's good at concealment.

OR +flaws OR +hole OR +holes' returns a little over two million results, and that number is growing all the time. Fortunately for all concerned, Microsoft has finally started to wake up to the inevitable PR and financial disaster that could befall it if it continues to ignore its customers' concerns. It has launched a number of broader initiatives in addition to its shared source programme, including Trustworthy Computing and one that it calls Secure by Default.

These are really umbrella PR terms used by Microsoft to convince the market that it is taking the issue seriously, but there have been positive signs of change. Windows Server 2003 now comes in a lock-down configuration, with all services turned off by default, and the upcoming Windows XP Service Pack 2 will focus almost exclusively on security, introducing an improved version of Internet Connection Firewall. Windows Update has settled into a monthly patch cycle so system administrators and home users can regularly keep their Windows installations up to date.

"What Microsoft envisions is a situation where it has total control over your PC – and you don't"

Another initiative Microsoft is pushing, in league with AMD and Intel, is something it has clumsily acronymed the NGSCB, (Next Generation Secure Computing Base), formerly known as Project Palladium. This controversial technology is, according to Microsoft, a protected computing environment inside a Windows-based PC. The ostensible aim is to enable improved security and privacy for users.

Richard Stallman, founder of the Free Software foundation, has a different interpretation. Rather than the Trusted Computing that Microsoft chooses to refer to, he suggests the phrase 'treacherous computing' should be used, and that the league of interested parties is rather more of a conspiracy to deny users control of their own computers. The technical core of the NGSCB is a chip which does encryption and key signing but keeps the encryption keys hidden from the user.

Chips with everything

Programs will use this chip to control which other programs you can run, which data you can edit or view, and which programs you connect to over the internet. What Microsoft envisions, according to Stallman, is a situation where it has total control over your PC – and you don't. Just because you paid for it, why should that mean you get to say what happens with it?

The internet, by its very design, is not controlled by anybody, and almost anybody can access it. Most of the people you will interact with on the internet are merely there for entertainment, knowledge and social interaction. It simply isn't true that around every corner of the web lurks somebody hell-bent on depriving you of your life, liberty and pursuit of pornography. However, there are people on the internet who wish you harm. And it is your responsibility, not Microsoft's, or divine providence's, to take the necessary precautions to ensure that you don't end up having to reformat your hard drive, or receiving a rude awakening when a credit card bill for £25,000 comes crashing on to your doormat. The rules are simple: be careful about what information you give out, always update your software regularly, and generally exercise due diligence when using the internet.

Microsoft is doing a lot more in the name of security than it has ever done before, but that doesn't excuse you from taking responsibility for your own protection. Indeed, if users don't act now and take issues of security to heart, by the time the Next Generation Secure Computing Base is upon us, it may be too late. Microsoft may try to argue that, since users are unable to take responsibility, it's best for the security of the internet that control over your computer simply be removed from you. And many may well believe that Microsoft has a fair point. **PCF**

INTERNET GUIDELINES

The following are good practice ideas you should follow if you want a secure online life...

DO'S

- Take out fraud protection for credit cards that you use for internet shopping. That way, if some nasty social engineer does take advantage of your generally trusting nature, then at least you'll have some financial recompense.
- Regularly check your credit card and bank statements for expenditure that shouldn't be there. Those purchases that shouldn't be there and that you don't recognise, obviously. Buyer's guilt doesn't count.
- Always install anti-virus software and run at least one full hard drive scan per month – more if you spend a lot of time looking at the internet's vast catalogue of, ahem, adult sites.
- Run a firewall on your internet connections. Use the default Internet Connection Firewall in Windows XP as a minimum, some other firewall like *ZoneAlarm* or *Norton Internet Security* if you are not using Windows XP.
- Always update your software regularly. Run Windows Update once a month. Make sure that your virus definition files are updated. Ensure any new service packs are installed.
- Behave sensibly, and try to bear in mind who you can and cannot trust. Always take necessary steps to protect yourself from those you cannot.

And these are some things that you probably shouldn't do. If you do, you're on your own...

DON'TS

- Don't give out personal details to somebody you don't know. Your system administrator will never ask for your password. Your credit card company will never ask you for your credit card number. Anybody asking for any of these is a scammer.
- Don't download and run any software from the internet that has not been virus scanned and that you cannot verify the integrity of. That's just asking for trouble, and it will all end in tears.
- Don't assume that you're safe or that your security is somebody else's responsibility, because it isn't. So there. Paranoia is good. We know they're out to get you – they told us.
- Don't run old versions of Windows, Internet Explorer or *Outlook (Express)*. Upgrade, you cheapskate. Alternatively, consider some of the alternatives that the cool kids are running, such as Mozilla's *Firefox* and *Thunderbird*.
- Don't open email attachments from somebody you don't know. Ever. If you do open an unknown attachment then you should be banned from using computers for life by being marooned on a remote island.

COMPLETE LISTING

ON THE DISC

It's impossible to ever be 100% safe from the risk of viruses, hack attacks or Trojans. These few programs will reduce the threat, though

- Ad-aware 6.0
- MaxCrypt 1.10
- Folder Access 2.0
- Perfect Keylogger Lite
- iSafeguard Freeware 4.0.0.438
- Omniquad Personal Firewall 1.1
- Password Safe 1.7.1
- Spybot – Search & Destroy 1.2
- ZoneAlarm 4.5.538
- WinGuard Pro 2004 5.6
- Any Password 1.3
- Zero Footprint Crypt 3.0
- Eraser 5.7
- AntiVir Personal Ed.
- ScrubXP 1.01
- GRL RealHidden 1.0
- Secrets-Editor 1.1
- Vcatch Basic 5.0.20.2
- AnalogX
- SuperShredder 1.00
- Sygate Personal Firewall 5.5

The PCFormat interview

FRED VON LOHMANN

Fred von Lohmann is senior intellectual property attorney at the Electronic Frontier Foundation. **Paul Douglas** caught up with him and his wise words regarding file sharing, copy protection and how computer users can defend their rights to fair use.

PCF You've claimed that Digital Rights Management (DRM) provides little protection for the copyright holder, while stifling innovation in products such as DVD players. Is DRM being deliberately misused by the entertainment industry, or is this an unfortunate side effect?

Von Lohmann DRM is being misused by a variety of industries. The entertainment industries are using DRM technologies (backed by unwise laws such as the DMCA – Digital Millennium Copyright Act) to stymie fair use and innovation. Certain elements of the consumer electronics and computing industries, meanwhile, are attempting to spin their own silk purse from the sow's ear of DRM, reasoning that a DRM standards cartel can be used to fence out new competitors. We've seen this most recently in the case of the broadcast flag mandate imposed on digital television vendors by the FCC (Federal Communications Commission) – if you want to build next-generation digital television equipment, you have to first join a private licensing cartel for the relevant DRM technology, a cartel that is controlled by your competitors. And in the computing space, Microsoft, Real and Apple are already using incompatible DRM file formats to lock consumers into their proprietary platforms.

PCF Hollywood has recently abandoned its attempt to stop publication of code that circumvents the CSS (Content Scrambling System) encryption used on DVDs, and the Norwegian programmer who published DeCSS (Decrypting CSS) was also been acquitted on retrial. Is it time to ditch copy-protection?

Von Lohmann Yes. Four senior Microsoft engineers made this clear in a November 2002 paper entitled 'The Darknet and the Future of Content Distribution'. Copy protection (and DRM more generally) is hopeless in a world where individuals have ready access to uncontrolled distribution networks (like the KaZaA and Gnutella networks). The ubiquity of cheap distribution technologies has created a 'smart cow' problem for DRM – all it takes is one smart cow to lift the latch on the gate (crack the DRM), and all the dumb cows waltz out behind (download it from Kazaa). No one has yet been able to design a DRM system for mass-market entertainment content that is proof against a smart cow.

"All it takes is one smart cow to lift the latch on the gate (crack the DRM) and all the dumb cows waltz out behind (download it from KaZaA)"

PCF Do you believe that the DMCA, which puts a ban on the act of circumventing copy protection, has had the industry's desired effect of decreasing copyright theft?

Von Lohmann No. Just look at DVD, which was the first widely distributed encrypted content. The DRM has proven to be an abject failure, with DVD copying software available in stores for less than $50 and on the internet for free. The DMCA has not prevented that, nor has it prevented the widespread availability of movies on P2P networks. And yet, despite all this, DVD continues to be monstrously popular and a huge profit centre. It looks quite clear that DRM and the DMCA are not necessary to preserve copyright incentives – you just need a compelling product at a fair price.

PCF How has the DMCA affected academic research, or industry innovation?

Von Lohmann While the DMCA has been a complete failure at reducing internet infringement, it has succeeded in stifling a wide array of legitimate research activity. In fact, Richard Clark, former cybersecurity czar in the Bush administration, called for DMCA reform in light of its impact on security research. We have collected dozens of examples of legitimate activity that has drawn legal threats under the DMCA in our 'Unintended Consequences' report. **www.eff.org/IP/DMCA/unintended_consequences.php.**

PCF The EFF says that suing file-sharers is not the answer to ensuring that artists get paid for their work. What would be a better course of action for the entertainment industry to take?

Von Lohmann First, it's not the entertainment industry as a whole that has seen difficulties in the internet age, but rather the music industry. The movie industry, for example, is enjoying its most profitable years in history. With respect to the music industry, I think it's foolish to sue your own customers. What would be more sensible would be to offer them an inexpensive way to come in from the cold, while allowing them to continue what they are clearly going to keep doing anyway – file sharing. The music industry should do for file sharers what they did for broadcast radio 80 years ago: create collective licensing societies that are able to offer blanket licences to individuals. Pay $5 a month, and feel free to download whatever music you like using whatever software suits you.

PCF Is existing copyright law still relevant in a digital age?

Von Lohmann Yes, absolutely. Copyright law has survived much worse than this. I'm a firm believer in the animating principle behind copyright laws – the need to create incentives for authors, balanced with the need for public access to the works they produce. Copyright owners, however, have managed to push the balance out of whack in recent years. We need to right the balance again, while continuing to preserve incentives for authors.

RIGHT, SAID FRED

You've read what he said, but what does he do?

Fred von Lohmann is senior intellectual property attorney with the Electronic Frontier Foundation, a corporation specialising in intellectual property issues. He has represented programmers, technology innovators and individuals in litigation against every major record label, movie studio and television network in the United States. In addition to litigation, he is also involved in EFF's efforts to educate policymakers regarding the proper balance between intellectual property protection and the public interest in fair use, free expression and innovation. Read from Fred's publications at **www.eff.org/homes/fred_von_lohmann.html**.

What the EF?

What on earth is the Electronic Frontier Foundation? The organisation was founded in July 1990 by Mitch Kapor, John Perry Barlow and John Gilmore. Based in San Francisco, the EFF is a donor-supported organisation working to protect people's rights regardless of technology; to educate the press, policymakers and the public about civil liberties issues related to technology; and to act as a defender of those liberties. EFF opposes misguided legislation, initiates and defends court cases preserving individuals' rights (amongst others) and publishes an archive of digital civil liberties info: **www.eff.org**

"Watching the watchers: Fred von Lohmann monitors those who develop the online laws."

PCF Is the entertainment industry finally coming around to your way of thinking, or will things get worse before they get better?
Von Lohmann I think things may get worse before they get better. The current crop of entertainment industry executives, especially in the music industry, are unable to think beyond the confines of the familiarity in their own industry. It reminds me of the movie studio execs in the late seventies who unanimously swore they would never release their movies on video cassettes. After several more consecutive quarters of falling revenues, I think the current crop of record label execs will be sacked and replaced by those with a mandate for change. That's when we'll start to see progress.

PCF How can individuals defend their rights to fair use in the face of some heavy-handed tactics by those in the music and movie industry?
Von Lohmann Join EFF! We are a membership organisation that depends upon the contributions, both in money and time, of our members. Seek out and help build your local consumer and grassroots organisations. Reject products and services that insist on treating you like a pirate until proven innocent. Educate yourself and your friends.

PCF Is the EFF naïve, trying to keep the electronic frontier free in the face of huge commercialism of the net?
Von Lohmann Not at all. The very best content, and many of the best technologies, on the internet are still non-commercial. Apache, the most popular web server in the world, is open source and non-commercial. My favourite blog, BoingBoing, is non-commercial. I have nothing against commercial offerings (thank God for Google), but I think non-commercial expression is often more interesting and insightful, even if it is sometimes harder to find.

PCF What can PCFormat readers do to support the EFF, and why?
Von Lohmann Join. Our ability to continue the work we do depends on the contributions of our members. We are doing more work in Europe this year than ever before, to help see to it that the mistakes made here in the United States (such as the DMCA) are not repeated elsewhere. **PCF**

HOLLY

The lure of the silver screen is a lusted-after heaven to the game industry. **Kieron Gillen** looks at how to avoid developer hell.

We get the distinct impression that game publishers are jealous of their cinematic counterparts. While the results are mostly artistically disastrous, someone making a film of your game is still one of the higher goals publishers and developers aim for. Doubt the envy? While there have been games describing themselves as interactive movies for 15 years, movie directors never describe their work as non-interactive games. But what does this interaction actually mean? Cinematic tendencies range from simple production values, to homage to directly-lifted techniques, and what the games industry once meant by 'cinematic' has altered.

The most obvious example of crossover between films and games is the game licence. Game company X pays film company Y, to put the name of film Z on the cover of their game. Game Z is purchased because punters want to shoot like film star A and sleep with love-interest B. Game is crap.

Knight vision

Well, that's the reputation of such things anyway, and like most reputations, it only has a small relation to the hard facts. So, yes, there's been a string of abominable cash-ins with only the expensive name to vaguely justify their existence. However, some of the finest games in the history of the industry have come from a licensed film property. Rare's N64 first-person shooter GoldenEye is one of the most influential games of the last 10 years, responsible for the popularisation of both stealth and a slower, more realistic pace to the genre. Rebellion's Aliens vs Predator took two great monstrous icons of modern cinema and turned them into one of the most tense experiences imaginable. And while Lucasarts has fallen on its own lightsaber upon occasion, it's also responsible for some of the greatest moments in PC gaming, from X-Wing to Knights of the Old Republic.

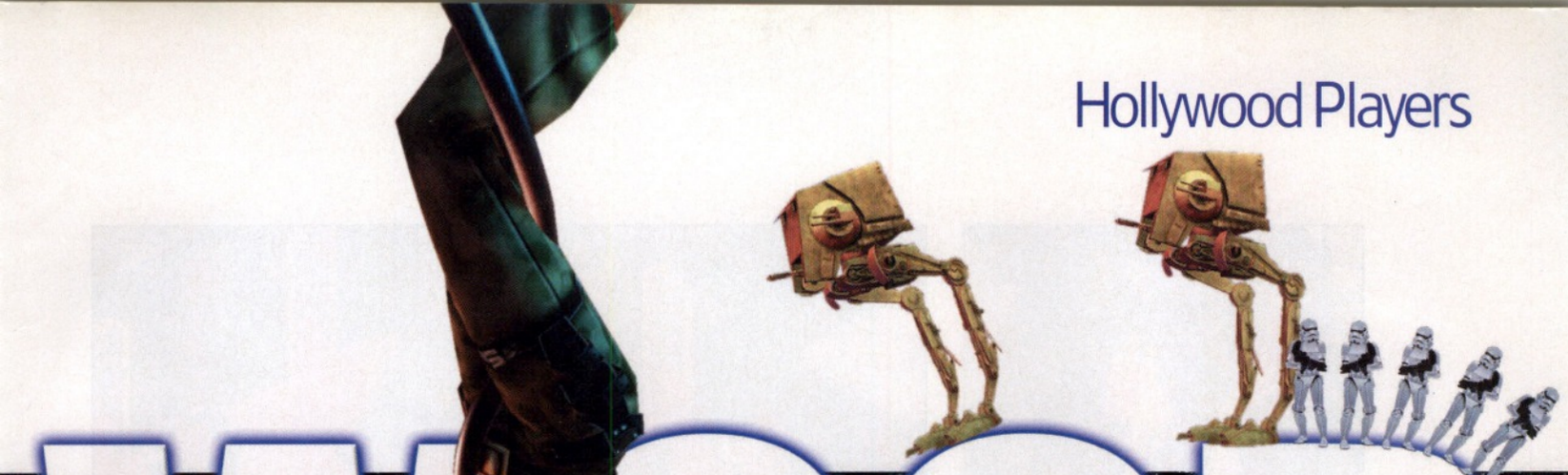
So, if licensed games can actually be this good, what stops them all climbing to similar heights? "Time," answers Dan Mayers from Eidos' acquisitions department. Movie licences exist to boost sales, and the best way to do that, and pretty much the only way to recoup the vast amount of money paid for the thing, is to release the game simultaneously with the movie. So the thinking goes, people walk out of cinemas and want to immerse themselves in the same. There's also the fact that the game can piggy back on the enormous marketing spend a company puts behind a major film.

Of course, this is problematic. "In order to do that," explains Mayers, "we have to get hold of the script; design the game; build the world in which the game is going to take place; make sure the level design is as close as possible to the film script; go through a lengthy approvals process with the studio; make and test the game and release it on all formats with all versions localised in accordance with the way the movie is localised globally. And that's a simple outline of what happens..."

"The fact is that unless you have a team of 100-plus, a reasonable amount of time to develop a game and extremely tight links with the movie studio, it's incredibly hard to get the two media sewn tightly together," sighs Mayers. "*AvP* and *GoldenEye* both worked because they had the time and space to develop the game outside those constraints, to work on technology and polish the game without having to ship the day the movie was released."

Tales from the script

From that, you may think that if you had no other information available on the quality of the licensed



WOOD PLAYERS

game, the closer to a contemporary release a game is, the greater the chance that it's rubbish. "Not necessarily," disagrees Mayers, before elaborating. "It's fair to say that if you develop a movie licence outside the constraints of the release, you have more flexibility in terms of what you deliver." While Rebellion knew exactly what the aliens' and predators' characteristics were, and could lock on to the key elements in their iconography and turn them into a game, working on a game for an unfinished film doesn't give you that leeway. "Developing the game prior to the release means you have to try to predict what the key elements are, as a lot of material from the various script revisions you'll get over the course of the development may wind up on the cutting room floor," laments Mayers.

However, what really defines a game's quality is the magical concept of time. The more you have, the better the game will be – within reason. "You can create time in two ways," explains Mayers. "Kick-start game development two years before release with a normal size team of 20 or 30, or, and this will increasingly be the case for those with plenty of cash and a confidence that the licence is a winner, you ramp up production closer to the release and have, say, 100 people working on the game for one year." The first method gives between 480 to 720 man months on the game, while the latter gives a huge 1,200. Essentially it's about using resources in lieu of time. Companies with well-established production processes and big teams – think an anagram of Stelar Necrotic, giant publisher fans – are perfectly able to work like this.

Ringing the changes

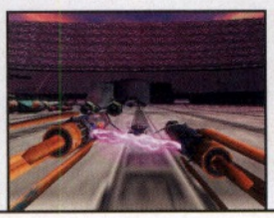
But a modern film licence can be a terribly different thing to the days of yore when Big Arnold's face was ↘

FROM FILM TO GAME We bet you saw this one coming...

Occasionally there's a scene that suggests the game tie-ins are weighing on the scriptwriter's brain a tad too much.

Phantom Menace

The plot, such as it is, is progressing as well as can be expected. And then it all comes crashing to a halt to allow a 20-minute futuristic race-sequence to play. Pod-racing game coming out, by any chance?



Attack of the Clones

The trend continued in the sequel, where every battle could be cross-referenced to a possible video game. The most blatant was the section where Jedi move along a conveyor belt and dodge crushing devices, as in any number of platform games.

Matrix: Reloaded and Revolutions

Who is this person? What are they getting up to? And why is that small child important? Don't look in the film to find out, clearly. In Enter The Matrix you'll be wanting to play to discover the truth...

Final Fantasy VIII: she dies. Or it may be the other one. We can never remember.

There's literally nothing cinematic in style about *Sims Superstar*, but the lure of the big lights provides plenty of room for social climbing.

FROM SILVER SCREEN TO SCREENSAVER

Beth Loughney, general manager of nVIDIA's Digital Film Group, talks technological convergence of games and movies.

PCFORMAT How much does a company such as nVIDIA, creating real-time graphics cards, look at non-real-time rendering, as used in Hollywood?

LOUGHNEY This is an area that nVIDIA is taking very seriously – during 2003, nVIDIA formed the Digital Film Group, a team dedicated to solving some of the movie industry's greatest technological challenges. If we can solve and accelerate the process of film quality rendering and take that into an interactive space, then we can begin to expose techniques such as shading and lighting in a real-time environment. The film group is also focused on the process of bringing a film from design inception to final production, such as pre-visualisation and post production – which represent two key areas of the movie making process and also plays a key role in this gradual process of moving from pre-rendered to real-time graphics.

PCF While we're on that, is the rate of transfer increasing or decreasing? Could you give an example of a technique and how long it took to move from big screen to home computer?

LOUGHNEY Let's look at *Toy Story*. Right now, we can just about render that level of graphics in real time with some creative techniques, and that was released about 10 years ago: it's a complex, lengthy process. I don't believe it'll take that long to get to *Toy Story 2* level, so we could say the time it takes a pre-rendered scene to move into the interactive space is getting smaller. However, it's important to note that there isn't a direct correlation between the two as both processes use different techniques, polygon models, shading techniques and so on.

PCF Talking abstractly, where's the limit? How long will it take to approach true photo-realism? And what happens then?

LOUGHNEY This is a long way off and very tricky to call. Right now we're steadily closing the gap between digital CG in Hollywood (*Monsters Inc*, *Finding Nemo*) and real-time interactive graphics, but true photo-realism is another ball game. Also, the more power you give the artist, the more they'll push technology to its limit. Whilst this means there is little limit as to how far we can go, the good news is that the films and digital content they contain will keep getting better.

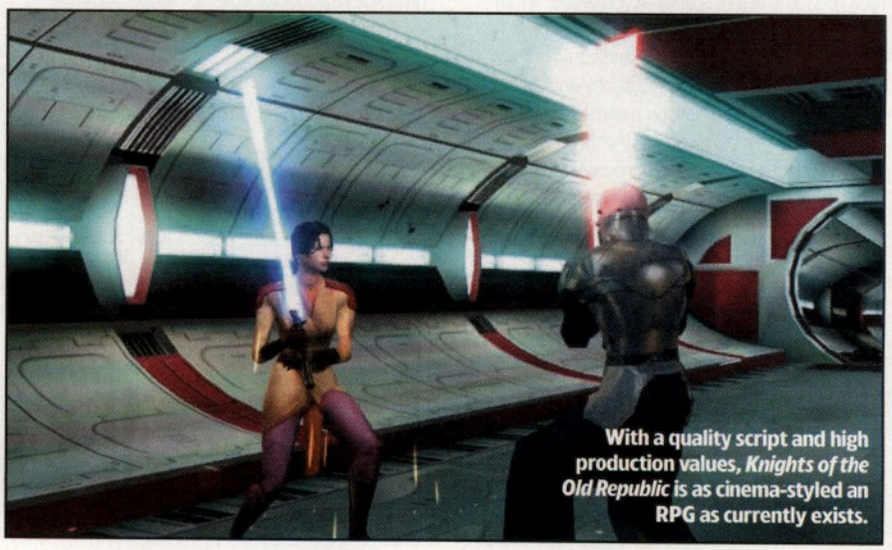
simply slapped on top of whatever side-on platformer happened to be sitting around your offices. While previous generations have talked about bringing games and movies together, it's only this current one that has made real steps in that direction. "The history of the relationship between videogaming and traditional media has been, for the most part, a one-way street," notes Rick Giolito, Electronic Arts LA's vice president and executive producer on *Medal of Honor*. However, now things can be very different. "Products such as EA's *Lord of the Rings* and *Harry Potter*, as well as *The Matrix*, have seen much closer collaboration between the two entities," elaborates Giolito, "with the content creators such as Peter Jackson, JK Rowling and the Wachowski brothers working hand-in-hand with the game creators to shape the games' content. I see this as the second phase of the relationship."

Shiny's Dave Perry, responsible for *Enter the Matrix*, describes what he feels to have learned from perhaps the closest collaboration yet seen between movies and games: "The experience has hammered home the point that the best material will come from the kind of unique collaboration that the Wachowskis have pioneered. Hollywood talent writing the script, Hollywood production designers sharing assets, Hollywood costume designers working with artists on character models and so on. We're going to be thinking all the time about how we can tap into that Hollywood talent and apply it to video games in serious ways." Despite the mixed critical reception his game received, he's clearly still positive about the future.

But according to Giolito, this second step of increased synergy is far from the end of the path: "The vision that I hold is that we will see the day where game creators and the great content creators from traditional media work collaboratively from day one to create new content that will debut in the interactive space," he extols. "I see this as the final phase and I call this a bottom-up creative pipeline. When this happens, interactive gaming companies will move into an entirely new phase and join the ranks of the Disneys, Pixars and Warner Bros of the world as true media giants."

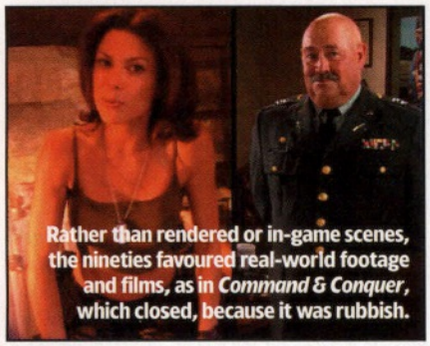
Spit and polish

The relationship between games and movies has been pained, and whether or not the future is as integrated as Giolito has predicted, it's clear that games are changing. Where we were once satisfied with hit-ball-to-get-high-score, we're now looking for a very different level of polish. And it's in the form of the higher production values where we see the

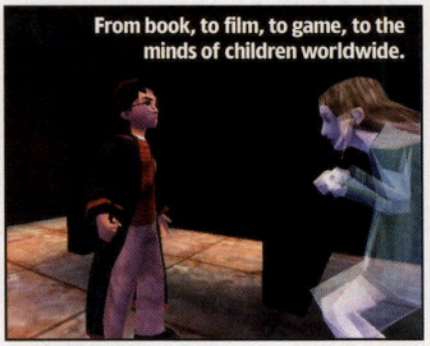


With a quality script and high production values, *Knights of the Old Republic* is as cinema-styled an RPG as currently exists.

The famous beach sequence in *Medal of Honor: Allied Assault* is a landmark achievement in the modern cinematic game.

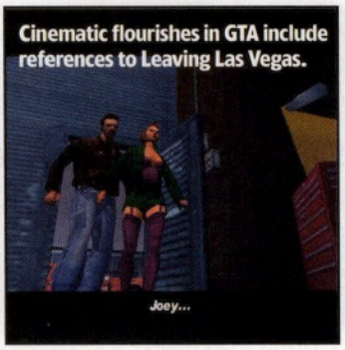


Rather than rendered or in-game scenes, the nineties favoured real-world footage and films, as in *Command & Conquer*, which closed, because it was rubbish.



From book, to film, to game, to the minds of children worldwide.

Star Wars games have left the movie plots behind.



Cinematic flourishes in GTA include references to Leaving Las Vegas.

Flashback cut down on cinematic flourishes, creating a more traditional action-adventure game.

most cinematic influence.

This can be most dramatically seen with something such as *Enter the Matrix*. "The game environments were designed by the films' production designer," explains Perry, "the characters were modelled working hand-in-hand with the costume designers; the one hour of exclusive footage was shot with the same quality and attention to detail as the films themselves."

But this increase isn't just limited to games directly tied to a movie – it permeates a huge selection of modern games. "We use many of the same pre-production techniques such as cinematics and pre-visualisation," notes Rick Giolito. "We use many of the same camera techniques seen on film as well. *Need for Speed* is our latest example of using tried and true camera and lighting effects to create a game that gives the player a sense of speed that has never been seen before. They include motion blur, high-contrast lighting, reflection and refraction. The team studied the effects in such movies as *Too Fast Too Furious* and others, and applied them."

Personnel who started in movies have also found new technical homes in game studios. "We are seeing a plethora of people moving over to our side from traditional media," states Giolito proudly. "Here at EALA, Oscar award winning visual effects supervisor Mark Lasoff is franchise art director on *Medal of Honor*, and Glenn Entis, one of the co-founders of Pacific Data Images [the company behind *Antz* and *Shrek*] is company chief visual officer. As for moving the other way, we see the odd animator and tools person move, but for the most part it's a rush to our side."

The plot thickens

Production values are one thing, but when people talk about cinematic moments in gaming, they're often using it as shorthand for a specific sort of thing. Dave Perry argues that "the biggest influence movies will have on games is the power of story. Strong story has been traditionally the weakest element of the gaming world, and here's where Hollywood talent stands to make the biggest impact. The future is getting Hollywood-quality talent to apply its creativity toward the fundamental stories that are told in games." Rather than respectability, it's the ability to tell a story effectively that most game developers envy celluloid for – and there's much effort in that area. Take, for example, *Grand Theft Auto: Vice City*. In terms of play it's a pure videogame, based on freedom – but it's not satisfied with that and uses an elaborate sequence of cut-scenes to present a Mafiosa epic. It's in the humble cut-scene where we see most of the direct crossover between games and movies – often showing exactly why a developer is coding instead of behind the film. Take, for example, *Metal Gear Solid 2*, which features seemingly endless conversations between two talking heads. For all its cinematic pretensions, it's something you'd never see in a proper movie. Even simple rules of exposition such as 'show, don't tell' seem to be beyond most developers. It's also worth noting in passing that a considerable portion of the games that are critically hailed as narrative successes owe much to pure prose (for example, *Planescape Torment*) or techniques that would be simply impossible in any other media (*System Shock 2*, being one example).

Things are improving as professional writers are brought in, but they're still not quite what we come to games for. "*The Lord of the Rings* sequences where the action blends from movie to game pretty seamlessly are stunning," argues Eidos' Dan Mayers, "but I still prefer to be in control of the action all the time. I'll take making my own destiny over listening to someone else's limp script and sub-Spielberg camera work any day."

It's interesting to note that the idea of what 'cinematic' actually means has changed enormously over the 15 years since Cinemaware started touting the concept of an interactive movie. No matter what the genre, the basic approach of having cut-scenes of some sort to elaborate the situation interspersed with the actual interaction, stayed solid. However, in the last five years this has altered. newer concepts of cinematic techniques bring the narrative cut-scene elements together with the interaction into a single

BRIGHT AND SHINY THINGS

Dave Perry, head of Shiny, talks about all things cinematic.

PCFORMAT Enter the Matrix was the biggest example of a movie/game tie-in, in recent years. How did this differ from a usual game?
PERRY With this project, Larry and Andy Wachowski really blazed a trail for how the video game industry can connect to Hollywood. Usually, video game projects that are tie-ins with films are considered to be ancillary to the film, just a side project. Instead, the Wachowskis envisioned the game as an integral part of the entire experience: the people who were working on the film were working on the game, too.

PCF Do you think there will be more examples of this synergistic approach in the coming years? Or will it be rarer?
PERRY We think this game completely changed the rules. Everyone is going to be doing it this way from here on out.

PCF How did you go about transferring the film techniques of the Matrix into a game? It's a piece with such a strong aesthetic, both in terms of technique and costuming – what were essentials to grasp?
PERRY It's important to boil it down to the essential elements the player wants to see – you need to crawl through that television or monitor and find out what it is that the player wants to experience, and make sure you deliver on that. For Enter the Matrix, that meant characters who could run on walls, cartwheel while firing bullets, and so on. We held tests with gamers and asked them what they wanted from a game like this. The challenge was to deliver on all of it.

CINEMATIC GAMING THROUGH THE AGES

Games trying to emulate movies are far from a new phenomenon.

ROCKET RANGER – 1988
Cinemaware was about the idea of interactive movies. *Rocket Ranger* was entirely characteristic of the company's approach, which melded groundbreaking graphics with simple sub-games, and a determined approach at atmosphere. While the cut-scenes were highly attractive, the actual game sections were little more than game-and-watch-style, arcade games.

ANOTHER WORLD – 1991
While constructed on the foundations laid by *Prince of Persia*, *Another World* broke huge ground, intuitively integrating the cinematic flair. Rather than cut-scenes acting as bookends to action, they were used to tell the story. When you picked up your pistol, for instance, a brief scene of your hand reaching for the weapon was shown. Seriously: this turned heads back in '91.

7TH GUEST – 1993
Despite *Another World* taking the arcade route, when the advent of CDs saw the phrase 'interactive movie' being bandied around, it was a determinedly cerebral, adventure-led approach that was taken. *7th Guest* was one of the first interactive movies to gain applause, mixing rendered sets with actors to tell the narrative, while relying on standard puzzles to act as the game.

MICROCOSM – 1994
Psygnosis' long-in-development CD-ROM take on *Impossible Journey* also played the cinematic card. It used the CD to allow fully rendered graphics for its *Space Harrier* styled tiny-spaceship-in-human-vein game. Applying movie-style production values to a simple arcade game forged a path that others are still following – with increased artistic success – to this day.

WING COMMANDER IV: PRICE OF FREEDOM – 1995
Origin had strong tendencies towards cinema, even from the first *Wing Commander*. Because this led to the dire *Wing Commander* film, we should damn it, but let's put that aside: few games managed the cinematic feel that Wing Commander achieved. While the *X-Wing* series was superior in terms of play, the character arcs ensured a fanbase.

RESIDENT EVIL – 1996
While *Alone in the Dark* did the survival horror thing first, *Resident Evil* created the accepted form of the genre. It created a movie atmosphere (albeit B movie) by mixing large-scale plot, camp script and third-person camera angles. In terms of a single genre taken from Hollywood, survival horror is the champ. Without film's inspiration, it's unlikely *Resident Evil* could ever have been devised.

METAL GEAR SOLID 2: SUBSTANCE – 2003
Konami's stealth-centred action-adventure is state of the art as far as a certain strand of game design would have it. The extensive script given to the player through copious cut-scenes is an accepted model – but here it's taken that bit further. Borrowing style and character from the movies, it's notable that Metal Gear Solid 2 shared another similarity to cinema: it was a self-conscious attempt at creating a blockbuster, anticipated by fans before even the PlayStation 2, where it originally appeared, was announced.

CALL OF DUTY – 2003
In terms of the new school of cinematic games, nothing takes it quite as far as Call of Duty. Rather than take narrative, it chooses to take moments, and rather than create them with cinematic approaches, it uses methods closer to gaming by placing you inside them and making them happen around you. In fact, in its determined using of scripting to choreograph the game it, like Metal Gear Solid before, has, according to some commentators, gone too far away from the freedom and expansiveness possible in games.

seamless entity. While there were traces before, the highly scripted sequences of *Half-Life* were the first real sign that a paradigm shift was on the way. These were then taken and expanded in the *Medal of Honor* games – the beach sequence in *Allied Assault* being the poster-child for this new movement. The latest iteration was in *Call of Duty*, where scripted sequences and AI movement are so tightly integrated to be invisible to the player. Rather than narrative, it's about the rush of sensations the player is guided through.

Second that emotion

"In *Medal of Honor*," Giolito explains, "we approach game design on a moment-by-moment basis. We chart out our levels so that we can craft the player experience through the use of gameplay, dialogue, lighting, music and effects, so we can hit our emotional target on what we would expect the player to be feeling at that moment." Because the game follows a linear path – like a movie – they can calculate what stimulus a player receives at any point, thus their emotional state, from dread to pride, or any other. "This is not unlike a film, where actors and directors break their scripts into beats, in an effort to deliver emotional intensity on a moment-by-moment basis that complements the action on-screen," he continues. "Once we have that emotional target, all of the creative energy is coalesced in paying off on that emotional beat through the use of the tools I describe above."

"It's an experience where you are swept away from the reality that you know and get so engrossed with the gaming experience that you actually feel real emotions"

So rather than trying to perform traditional narrative, this idea of a cinematic experience is something very different. "Simply put, it's an experience where you are swept away from the reality that you know and get so deeply involved and engrossed with the gaming experience that you actually feel real emotions, that your mind tricks you into almost believing that it is happening," claims Giolito. "Great films are excellent at this. I often get swept away, carried to another place and time, vicariously experiencing the emotional ebbs and flows of the character on screen that we identify with most. Who didn't feel the sense of loss when Tom Hanks' character in *Saving Private Ryan* was killed? We know it's really an actor by the name of Tom, we know that the blood and bullets aren't real, we know that it's just an image on a piece of celluloid, yet we cry. That's the magic of the cinematic experience. When everything comes together – performance, cinematography and direction, the costumes, lighting, music and effects that transport us to another time and place. It is truly magic and that magic is our most ultimate goal."

Or so goes the theory. The scripted action-led game is the current state of the art in games that take from cinema. However, while it's the recipient of more critical acclaim than the vast majority of previous cinematic game incarnations, there's still a large number of game players who consider this on-rails progression too prescriptive: the fact that they're being guided along this ghost train of planned sensations stops their immersion. It's possible game developers will discover increasingly subtle ways of guiding the player, and this'll become the dominant form. Alternatively, this could be another of the passing stages of gaming, with 'Scripted cinematic shooters' destined to be a retro article a decade hence. Gaming history and life is never quite as neat or simple as a three-act Hollywood movie. **PCF**

He's the strongest there is!

Tron 2.0 attempts to follow themes and expand design aesthetic.

The trend of recreating popular licences has lead to SCi's The Great Escape.

"Intensely involving and rewarding" PC Zone

"Immersive, story driven brilliance" 93% PC Gamer

"Expertly accomplished" PC Format

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LOAD IT

Eliminate two security guards

Find elevator down to street

Discover head of rival faction

Talk to him

Persuade him to abandon the conflict

World shifts towards peace and prosperity

LEAVE IT

Move stealthily past two security guards

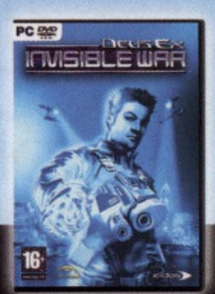
Meet informant on street

Bribe him, buy sniper rifle with cash

Use to execute head of rival faction

Security bots close in, you and 12 bystanders are killed

World shifts towards military tyranny



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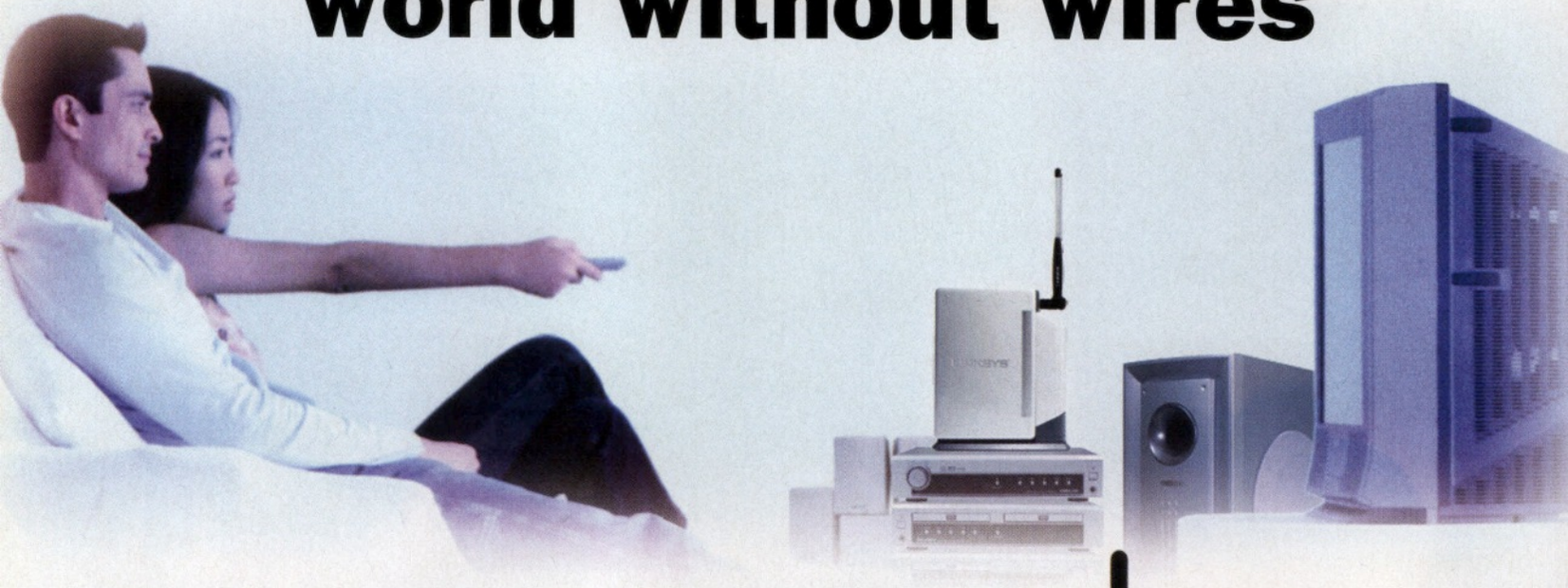

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PCF Hub

PUTTING THE PC AT THE HEART OF **YOUR DIGITAL LIFESTYLE**

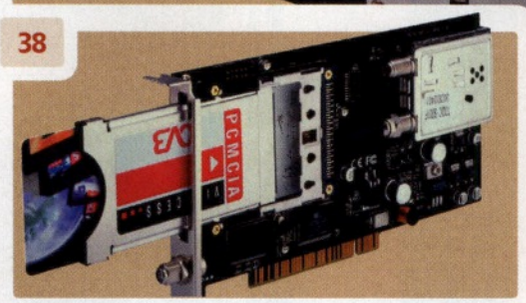
LIKE LEGO

The future of the PC is Ikea-style self assembly.

We're used to having our PCs in bits on *PCFormat*, but only because it's often easier than putting everything together only to take it apart again to add something new tomorrow. It still staggers me – and it's a bit of a personal defeat – that even some *PCFormat* readers are still afraid of taking the cover off a PC case. I instruct you now – go and remove those four screws and at least stare at your motherboard in the eyes, before it's too late.

You see, the industry – that enigmatic other against which we should all position ourselves – is spending a lot of time and money developing external units for modular computer systems; soon, no one need ever take their PC apart again. Where's the fun in that, we asked ourselves... Until we read Mike Abolins' feature this month, and then decided they might be on to something.

Have a read and make up your own mind.



APRIL 2004 ISSUE 160

CONTENTS

DIGITAL DESIRABLES

We don't pay Mike Abolins, you know. But it's for his own good – he'd only waste his wages on all the gorgeous kit he reviews. **p36**

TV TUNER CARDS

After testing five TV tuners, we thought it only fair to buy some special spectacles for Gary Marshall's square eyes. **p38**

DVD REVIEWS

Missed the latest blockbuster at the cinema? Who cares? Dan Geary reveals what's worth watching at home. **p40**

MODULAR PCs

The future of the PC is going to pieces. And that's great, according to Mike Abolins. **p42**

STREAMING MEDIA

Stream photos, video and MP3s from your PC to your TV or hi-fi. Mary Branscombe explains how. **p46**

Digital desirables

Wondering what to spend that tax rebate on? Don't ask **Mike Abolins**, he's still being investigated by the Inland Revenue.

DIGITAL AUDIO PLAYER

WURLITZER DIGITAL JUKEBOX

$1,800 (£980) GIBSON AUDIO WWW.GIBSONAUDIO.COM

Ever since we idolised the Fonz on *Happy Days*, we've wanted our own jukebox. When Creative announced its original DAP Jukebox back in 2000 we got very excited, picturing a big ol' cabinet with aerated water lights, neon lettering and a platter full of top tunes. The latter feature aside, we were somewhat disappointed when faced with a Discman-sized portable MP3 player. Where's the chrome? And instead of magically playing music when we applied a Fonzarelli-esque thump to its side, it merely fell off the table. It's taken four years and Gibson Audio (related to the Gibson of guitar fame) to realise our dreams with its Wurlitzer Digital Jukebox. OK, so it doesn't have the same stage presence as the jukebox from Al's Drive In and it too doesn't appreciate a short, sharp smack, but, wow, it looks the part all the same.

INFORMER

Thanks to the wireless internet connection, all of your tunes can be labelled via CDDB, and also include the album artwork, reviews and artist biographies. All of which can be viewed on the detachable remote.

INVISIBLE TOUCH

The wireless remote features a 3.5-inch LCD touch-screen and uses 802.11b so you don't need a line of sight to the cabinet. Outfit it with an SD card and you can take your tunes with you wherever you go.

EVERLONG

An 80Gb hard drive lives beneath that matt grey exterior – that's enough for 1,000 CDs when you rip to WMA at 160kbps. If that's not enough, there's a USB 2.0 port for an external hard drive.

GO YOUR OWN WAY

You can keep garage music where it belongs – in said garage – thanks to the music zoning feature that enables you to broadcast different tracks to different rooms in your house.

CONNECTED

The Digital Jukebox uses 802.11b to connect wirelessly to your home network. Get a broadband connection and you can download songs from record labels online, as well as receiving streaming internet radio.

STAND BY ME

Klipsch provides the loud parts, with a couple of floor-standers. Dual 3.5-inch cones and a 0.5-inch silk diaphragm Tractrix horn adorn each speaker, which, along with an 8-inch subwoofer in the main cabinet, is powered by a 145-watt amp.

AV AMPLIFIER

PIONEER VSX-AX5I-S

£1,200 PIONEER
WWW.PIONEER.CO.UK

Performance cars have gold-plated engine bays to stop heat from encroaching into the cockpit. Performance AV equipment, it seems, uses copper-plating instead, as this new THX Select certified amp testifies. The copper suppresses signal interference between circuits and reduces impedance within the amp, which provides a cleaner signal to your speakers. An iLink interface is available to connect DVD-A and SACD players, as well as a USB port, turning the AX5i-S into the mother of external soundcards. A 100-watt per channel output ensures no sleep for neighbours.

WIRELESS MEDIA ADAPTOR

NETGEAR MP101

£125 NETGEAR
WWW.NETGEAR.CO.UK

Netgear has a fine reputation when it comes to wireless kit, and the company's first wireless media adaptor should be a sound proposition. Plugging it into any home stereo, AV amp or set of powered 2.1 desktop speakers instantly connects the device to your existing 802.11b or g wireless network. The MP101 can then access digital music that's stored on any computer that's connected to the network, streaming it to your stereo. A large LCD display shows the relevant track info, while support for WEP 64-bit or 128-bit encryption maintains your network's security.

LCD TV

SHARP AQUOS LC15L1E

£1,400 SHARP
WWW.SHARP.CO.UK/AQUOS_TV

Now this is what you call a portable TV: a 15-inch LCD screen with three hours' battery life, that connects wirelessly to your satellite/cable box, VCR and DVD player. It couldn't be more different than the pathetically equipped handheld efforts that are more akin to a child's plaything. Admittedly, you can't carry the Aquos around town, but it's ideal for taking it out into the garden to catch the tennis on a lazy summer's day. Everything connects to its transmitter box, which then beams the signal via a 2.4GHz wireless connection to the TV over a 30m range.

MUSICAL INSTRUMENT

GIBSON DIGITAL GUITAR

$400 (£220) GIBSON
WWW.GIBSONMAGIC.COM

Apparently, that trademark rock 'n' roll hum from an electric guitar when it's plugged into an amp and turned on, is a source of annoyance that instrument manufacturers have forever been trying to overcome. Gibson seems to have the answer with its latest Les Paul model. The Digital Guitar converts the analogue sound from the strings into a digital signal inside the guitar, instead of passing it down a dirty cable to an amp. A network cable connects the guitar to a computer, where different effects can be applied to individual strings in real time, such as adjusting the volume, pan and EQ.

GET THE GEAR IN

101% APR – pay now, buy later.

CABINET MINISTER

www.kellstudios.com

A couple of issues ago we looked at the monstrous Kell Convergence Cabinet, a monolith-like enclosure for your collection of home entertainment kit. The manufacturer, Kell, has twigged that maybe not everyone needs, nay, wants, something like that dominating the lounge of their three-bed Surbiton semi. And the Nineteen Console cabinet is the answer. Combining the cutting-edge styling and attention to detail from its big brother, the Nineteen Console features two 19-inch racks, 12 power points and four cooling fans that expel 14 cubic feet of air every minute, all at a near-inaudible 20dB.

DON'T LICK THE TRACK

www.scalextric.co.uk

OK, so this is only entertaining if you're winning, but there's still something to be said for racing on a Scalextric in this day and age of Colin McRae and TOCA Race Car Driver. Driving at full pelt just to see the headlights work was always worth the resulting crash and chipped skirting boards. Scalextric is receiving an upgrade this year with its Sport Digital Pro and Sport World System initiatives, which enable you to connect the track to your PC to time and tune up your cars before competing against foes from across the globe on the internet.

CD GOINGS-ON

www.panasonic.co.uk

Ok, so portable CD players aren't the latest technology on the block (indeed, recent archeological evidence points to their significance in Bronze Age religious practices) but when they look this good, who cares? The SL-J900's 45-second anti-skip memory, 34-hour playback, support for MP3 CDs and a funky docking station with inbuilt stereo speakers makes for an impressive package. Add in its chiselled good looks and this CD player is more attractive than many MP3s. It sounds as good as it looks, too – a 1-bit DAC keeps the signal digital until the last moment: superb clarity.

Telly addicts

Your PC plays your music and movies – so why not add TV and video to the media mix? **Gary Marshall** tunes in.

In the dark, dreary days before the concept of the PC hub became a reality, TV tuner cards were pretty pointless. Why watch TV in a window the size of a postage stamp when you could use a real telly instead? However, cards have got much smarter and if your PC is the heart of your home entertainment system, a TV card can transform the way you watch the box. Basic cards give you TV and FM radio reception, but more powerful cards can turn your PC into a personal digital video recorder. Some of them can even handle satellite and cable channels or Dolby surround, and the latest video compression technology means you can create high-quality video CDs or DVDs from your recordings.

Whether you're looking for a cheap and cheerful TV tuner card or an all-singing, all-dancing satellite receiver, there are plenty of cards to choose from – and they're not as expensive as you might expect. **PCF**

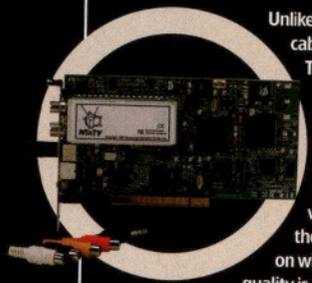
WINTV FM

£52 Hauppauge

On paper, the WinTV FM card is the perfect solution: a 125-channel, cable-ready TV and FM radio tuner plus a bundle that includes the main *WinTV* application and personal video recording software. With a standard co-axial TV input and an S-Video in, you can connect most set-top boxes and video recorders. There's even a remote control. In reality, however, it's not quite so impressive. The drivers repeatedly crashed our PC, and it's worth pointing out that if you're connecting a set-top box to the WinTV card, the personal video recorder will only be able to record the currently selected channel on the box: if you want to watch Sky Sports while taping Sky Movies, you're out of luck. It's hardly a competitor to a Sky+ box, but then again it's a lot cheaper. However, the software is very crash-prone, so we suggest you spend a little bit more and up the reliability.

WINTV THEATRE

£99.99 Hauppauge



Unlike the WinTV FM, which requires you to run a cable from the video card to your soundcard, the Theatre includes its own audio output and an adaptor that enables you to run five speakers. It delivers the same TV and FM radio features as its cheaper sibling, with one notable improvement: Dolby Pro-Logic surround. OK, this isn't as good as 5.1 Dolby Digital, but it is a vast improvement over plain old stereo. As with the WinTV FM, satellite channels are dependent on whatever channel is on your set-top box. Picture quality is decent and the drivers don't suffer from the crashes we encountered with the WinTV FM, but the software bundle is smaller. There's the basic *WinTV* application and Teletext features, but while the software can capture still images or video clips, you don't get a dedicated personal video recording program. It's a strange place to cut corners.

WINTV PVR2 USB

£139.99 Hauppauge

The PVR2 dispenses with the usual PCI card and as a result has room for a few more connections. You get the standard co-axial connections for the TV and FM tuner, and there's a Composite Video in, two audio inputs and an S-Video input. The unit also includes a hardware MPEG-1 and MPEG-2 encoder plus Ulead's *DVD MovieFactory* software. The PVR2 will work with USB 1.1 ports, but for best results (and real-time encoding) you'll need USB 2.0. The bundle includes video recording software, which gives your PC the TiVo-style ability to pause and resume live television. It isn't the prettiest software we've ever seen but it does the job and it's easy enough to use – and this time the drivers were perfectly stable on our Windows XP test machine. The PVR2 offers a decent and reliable way to turn your PC into a TV and digital video recorder.

PC TV DELUXE

£149.99 Pinnacle

Like the Hauppauge PVR2, the PC TV Deluxe is an external USB 2.0 box that turns your PC into a TiVo-style personal video recorder. There's no FM radio connection – the device is purely for TV viewing – but you do get the standard co-axial TV connector and inputs for S-Video, Composite Video and stereo audio. The Pinnacle unit works fine on USB 1.1 but you'll need USB 2.0 for real-time MPEG encoding. To our eyes, the PC TV is smarter looking than its Hauppauge competitor, and its software is more pleasant; we did, however, encounter the occasional crash on playback. You can pause or record live TV, schedule recordings for later, and convert between different multimedia file formats. It's an impressive bundle, although if you also want to tune into FM radio stations you might prefer the Hauppauge model. Otherwise, there's little to choose between the two competing products.

PC TV SAT CI

£129.99 Pinnacle

The Sat CI is very different from the other tuner cards on test. Instead of connecting to a normal TV aerial, it connects to your satellite system. With satellite TV and radio, and the ability to record or pause and resume live TV, it essentially turns your PC into a Sky+ box without the monthly subscription. Well, not quite: you can't get Sky, or at least you can't get the subscription channels such as movies or football. The reason you can't get Sky's paid-for channels is that the Sat CI uses the standard PC card-style technology called CAM (Conditional Access Module). On a Sky Digibox the CAM is built-in, and understandably Sky isn't interested in letting other people make CAMs that can access their channels. This means your choice is limited to the free satellite channels and any non-Sky channels for which you've bought the appropriate CAM and viewing card – which can be extremely expensive.

TV TUNER CARDS

Which of these little beauties will make you the host with the most?

WINTV FM

Type PCI
Specification TV and FM radio tuner
Audio Nicam stereo, FM radio
Connections FM (co-ax), TV (co-ax), line out, line in, S-Video in, IR for remote
Software *WinTV* application, *SoftPVR, WinTV Radio, VTPlus Professional Teletext, WinTV Scheduler*
Web www.hauppauge.co.uk
Phone 0207 378 1997

PCFHub VERDICT

✪✪✪✪✪

WINTV THEATRE

Type PCI
Specification TV and FM radio tuner
Audio Nicam stereo, FM radio, Dolby Surround Pro-Logic
Connections FM (co-ax), TV (co-ax), audio out (surround), line in, S-Video in, IR for remote
Software *WinTV* application, *WinTV Snapshot, WinTV Capture, VTPlus Professional Teletext*
Web www.hauppauge.co.uk
Phone 0207 378 1997

PCFHub VERDICT

✪✪✪✪✪

WINTV PVR2 USB

Type USB 2.0
Specification TV and FM radio tuner with MPEG-1 and MPEG-2 encoding
Audio Nicam stereo, FM radio
Connections FM (co-ax), TV (co-ax), S-Video in, Composite Video in, Audio in L/R, IR for remote
Software *WinTV* application, *WinTV Scheduler, WinTV Editor, Ulead DVD MovieFactory 2*
Web www.hauppauge.co.uk
Phone 0207 378 1997

PCFHub VERDICT

✪✪✪✪✪

PC TV DELUXE

Type USB 2.0
Specification TV tuner with MPEG-1 and MPEG-2 encoding
Audio Nicam stereo
Connections TV (co-ax), S-Video in, Composite Video in, Stereo Audio in
Software *PCTV Vision, T-Rex* multimedia converter, *WebText* (Teletext)
Web www.pinnaclesys.com
Phone 01895 442 003

PCFHub VERDICT

✪✪✪✪✪

PC TV SAT CI

Type PCI
Specification PC satellite TV/radio adaptor
Audio Stereo
Connections Satellite in, CAM socket
Software *Pinnacle Expression CD/DVD authoring, PCTV Vision* (TV, Radio and Video recording), *T-Rex* multimedia converter, *Pinnacle Studio* video editor, *WebText* (Teletext).
Web www.pinnaclesys.com
Phone 01895 442 003

PCFHub VERDICT

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NOW SHOWING
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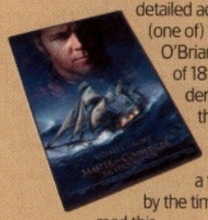
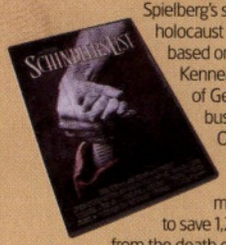
MASTER & COMMANDER: THE FAR SIDE OF THE WORLD
£24.99 Region 2



Elegant, expansive, minutely detailed adaptation of (one of) Patrick O'Brian's tales of 18th century derring-do in the Georgian navy. Might have won a few Oscars too, by the time you read this.

SCHINDLER'S LIST
£24.99 Region 2

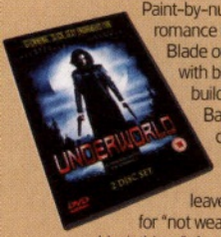


Spielberg's sombre holocaust epic, based on Thomas Kenneally's story of German businessman Oskar Schindler, who managed to save 1,200 Jews from the death camps, finally gets a release. No word on extra features yet, though.

BAD BOYS II
£24.99 Region 2

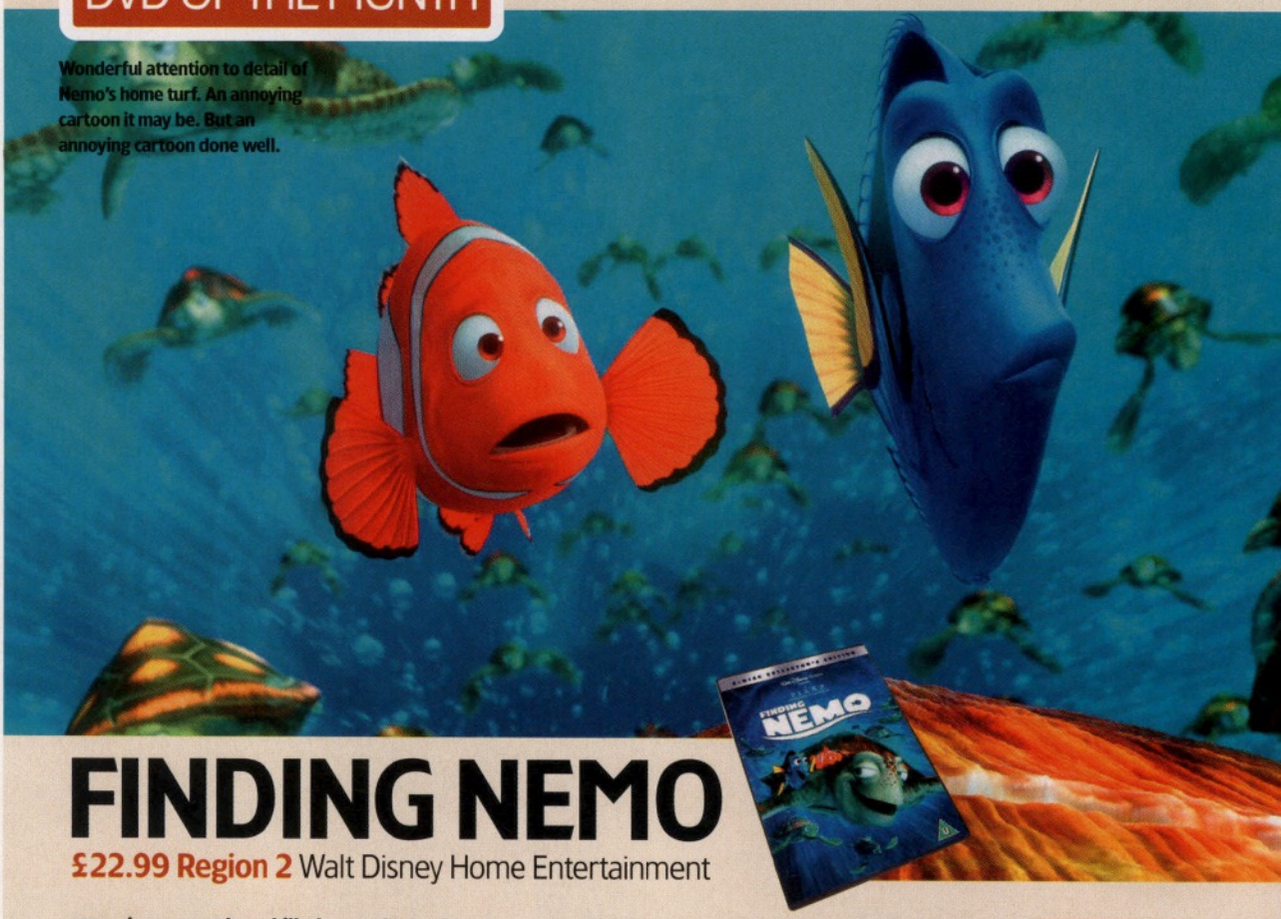
Badged delinquents Lowery and Burnett return, no doubt twice as bad as they were before, to punish the criminal fraternity with explosions and fireballs. You may also have had the (mis)fortune to stumble across its console game incarnation.

UNDERWORLD
£19.99 Region 2



Paint-by-numbers gothy romance reminiscent of Blade or The Crow, with big scary buildings out of Batman. Your correspondent was recently asked to leave a goth bar for "not wearing enough black things". Anyway, stylised vampire-werewolf action with a hokey across-the-barricades love story in there, too. Some people love this stuff, you know.

DVD OF THE MONTH



Wonderful attention to detail of Nemo's home turf. An annoying cartoon it may be. But an annoying cartoon done well.

FINDING NEMO
£22.99 Region 2 Walt Disney Home Entertainment

Disney must have killed most of its traditional pen-and-ink people and sold their flayed bottoms to buy an unstoppable army of shiny chromium robots with which to ruthlessly construct more astounding *Pixar* movies, such is their phenomenal box office draw.

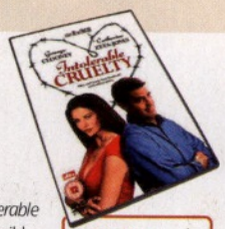
Finding Nemo is the latest piece of annoyingly flawless entertainment from the Haus of *Toy Story*, although you'll know that anyway because it's the biggest-selling animated feature of all time, or something. And while the remaining art Oompah Loompahs get shunted off to the farm to hand-paint cels, one by one, on dozy clearance-sale crap like *Brother Bear*, you, if you've any sense, will be watching stuff like this. Assuming you like stuff like this, of course.

There was no question, *Pixar* wasn't just going to rehash bits of *The Little Mermaid* - its reputation precedes it now. But this simple tale is probably the best thing it's done, ever, and that's notwithstanding the seizure-inducing colour palette or incredible attention to detail in the physics of the water, which glitters like it did on your recent scuba-diving holiday. Marry that to some fantastic opportunities for characterisation, an ace supporting cast (Willem Dafoe, Geoffrey Rush and Barry Humphries as a veggie shark), and you have the best animated movie until they do a better one next year. We'll run out of superlatives at this rate.

PCFHub VERDICT
FILM ★★★★★ | DISC ★★★★☆

DETAILS
Picture 1.78:1 anamorphic
Sound Dolby Digital 5.1
Extras Disc intros, visual commentary, virtual aquariums, Making Nemo documentary, Exploring The Reef with Jean-Michel Cousteau, and much more.

INTOLERABLE CRUELTY
£19.99 Region 2 Universal

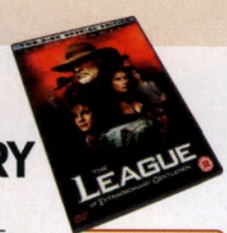


The latest movie of the Brothers Coen, *Intolerable Cruelty* doesn't look or feel much like one, possibly because of the bad pacing and confusing, over-egged storyline. The tale of pre-nuptial lawyer Miles Massey who falls for one of his clients, a vampy Anna Nicole Smith type (woodenly portrayed by Catherine Zeta-Jones-Douglas), it wants to be a charming old Billy Wilder rom com, all sparkle and snappy dialogue. But it's a lumpen slice of overacted, overwritten ham. It's worth watching to see how close George Clooney has got to being Cary Grant (he wears it well), and there are some vaguely amusing cameos from Geoffrey Rush and Billy Bob Thornton. But really, it's a confusing indulgent mess.

PCFHub VERDICT
FILM ★★☆☆☆ | DISC ★★★☆☆

DETAILS
Picture 1.85:1 anamorphic
Sound Dolby Digital 5.1
Extras A Look Inside Intolerable Cruelty featurette, outtakes and The Wardrobe featurette.

THE LEAGUE OF EXTRAORDINARY GENTLEMEN
£22.99 Region 2 20th Century Fox



Terrible tales abound of LXG's daunting, flood-ridden shoot in Prague, and the stormy on-set relationship between Connery and Norrington (which certainly helps when it comes to the inclusion of a 'making of' on this two-disc edition). The movie, though, while not quite an unmitigated disaster, ain't right. Shame - Alan Moore's story of literary 19th century super-friends joining to combat evil bad guys, plus large amounts of cash and a star-studded cast, should equal sure-fire hit, but it just hobbles along, wasting big names on a flaccid script and turgid action sequences.

PCFHub VERDICT
FILM ★★☆☆☆ | DISC ★★★☆☆

DETAILS
Picture 2.35:1 anamorphic
Sound Dolby Digital 5.1
Extras Audio commentaries, Assembling The League production documentary, extended and deleted scenes, and more. Plus trailers, TV spots, poster artwork.

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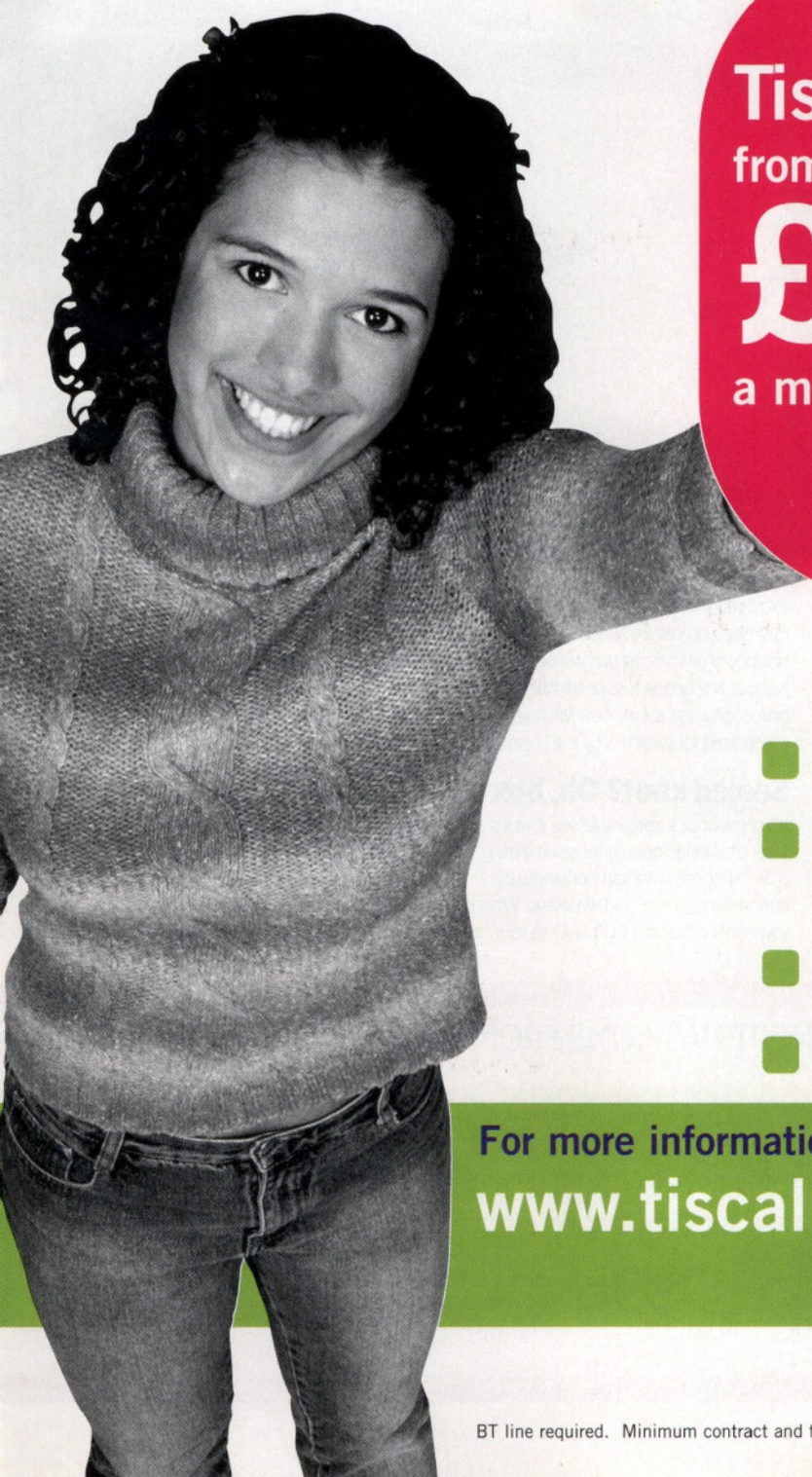

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Welcome to the modular world

Our offices, our cars, our holidays, even our educations have become modular, and now the computer's going to pieces. **Mike Abolins** is worried...

Aesthetics are central to the modular idea, making it more palatable for living room locations.

The IT industry, generally speaking, doesn't take many cues from MFI. A self-build flat-pack PC with a vital packet of screws missing is something we've largely managed to avoid, although the badly translated 'instructions' you get with motherboards are something we're all too familiar with. But MFI has been championing a concept that is creeping into every facet of our lives, like dry rot invading your roof joists. Except in a good way, of course. It's modularity.

For years, our inexpensive kitchen and bedroom furniture has been modular, made up of interchangeable components that you can choose from a catalogue, swapping and switching cupboards, cabinets and draws as you see fit. You don't need to be a carpenter or expert woodsmith; often all you need is a Philips screwdriver and an empty afternoon.

The reasons behind this change in philosophy are plain and simple: costs can be cut; and it's easy for the customer to tailor a product precisely to his or her exact requirements. When you need to upgrade, you can be sure that a matching sideboard or shelving unit will be available without any undue fuss or bother. It's a philosophy that is only now starting to be recognised for what it is by the IT industry.

Sealed knot? Oh, box

It's somewhat surprising to see that it's taken this long; modularity is something that the home entertainment industry cottoned on to a fair old while ago. When you wanted to add a CD player to your old hi-fi, you simply bought a separate component, plugged it into your existing amp and away you go. The same thing is happening now with DAB tuners. It's this kind of concept that PC hardware manufacturers are looking to for their daily bread over the next 10 years. The industry has already coined its own term for it: sealed box computing. It's an idea that will finally bring together all the promises, visions and claims to create a holistic home information and entertainment centre from the humble

THE ROAD TO MODULARITY WHERE THE CONCEPT HAS COME FROM, AND WHERE IT'S GOING

1986 Compaq invents the IDE (later known as ATA) interface with the help of Western Digital, among others. A year later, the first motherboard-mounted IDE/ATA controllers appear, removing the need for a separate controller card to be installed in a system. Data transfer speeds initially top out at 16Mbps.

1990 The original Advanced Technology Attachment (ATA) standard is submitted for approval; it introduced the master/slave configuration, as well as PIO and DMA modes. It took four years to be formally approved by the American National Standards Institute (ANSI), which gave it the ATA acronym.

1993 Intel designs and releases the Peripheral Component Interconnect (PCI) to replace the lacklustre VESA (Video Electronics Standards Association) Local Bus standard that was used in Intel 486-based PCs. It's met with widespread acclaim; Apple adopts the standard, too. It runs at between 20 and 33MHz, carrying 32 bits at a time over a 124-pin connector, or 64 bits over a 188-pin connector.

1996 Intel starts building support for USB into its PC chipsets and other manufacturers do likewise. Later editions of Windows 95 offer limited support for the Universal Serial Bus, which becomes the first true plug-and-play interface for PC hardware. Four years later, USB 2.0 is announced to compete with FireWire.

WHAT'S IN YOUR STACK?

If you're not part of the solution, you're part of the problem

The strength of the modular PC is that it doesn't depend solely on loading a bulky operating system in order to work as a home entertainment device. Here we break down the modular PC into its individual parts and look at how they'll work both independently and as a whole.

Base unit

Housing the CPU, RAM, hard drive and basic graphics and audio hardware, this module has everything needed to run as a basic computer. A network port or built-in Wi-Fi capability (like Intel's Centrino) allows rapid connection to the home network or internet.

Optical drive

A CD or DVD drive may not be necessary if Microsoft's dream of providing software solutions via the internet comes true, but the optical drive can be used as a standalone player and be connected to a TV or monitor. It can also be used with the sound module as a standalone stereo.

Hard drive

The extra hard drive acts as an expansion to the existing hard drive in the base unit or as a standalone MP3 server when used in conjunction with the sound module. The LCD screen displays the capacity of the drive and allows for file navigation when playing MP3s.

Power supply

Power is supplied to the base unit, which in turn passes power to the various modules via the inter-modular connections. The PSU can be contained within the base unit for low-power (and therefore, low heat) purposes or supplemented or substituted with an external PSU in order to achieve more power and better heat dissipation.

External soundcard

This enables the optical drive and expansion hard drive to act independently of the base unit when playing music or movies. Boasts support for all the usual standards, such as Dolby Digital, DTS and 3D gaming APIs like EAX. Also includes inputs to take audio streams from a TV or satellite receiver.

External graphics card

Outputs a signal to your monitor and/or your TV set from the base unit (when gaming, for example) or the optical drive when watching DVD movies. Includes monitor switching to select and display different inputs and different outputs.

Inter-modular connection

Depending upon the type of module, a PCI Express or SATA connection is utilised to connect the modules to the base unit. Along with transferring data back and forth, power is also carried by the connection, removing the need for every module to have its own power brick.

Easy operation

The modules are designed to be used when the base unit is off, so they must be operable without a monitor. The LCD screens and front-panel buttons provide the most commonly used controls for this purpose, so users can operate the computer like a hi-fi.

personal computer. And it's happening right now. The technology exists and is being fine-tuned as you read, some of it in products that are on the shelves of your local PC World today.

Driving force

The main reason behind the drive to a modular PC is to make it an easier device to live with. It'll be easier to use, but at the same time capable of so much more than our computers can do today. It makes the PC a lot more attractive and easy to grasp by the average *Coronation Street* viewing *Daily Mail* reader who fancies giving email a go. Meanwhile, the more technically-minded and progressive computer user (that would be you, Blue-eyes) can tailor their computer to particular requirements and use it for more than just surfing for a better deal on home insurance or emailing Aunty Maureen on the Costa Brava.

New users will be able to use the computer as a total home entertainment and information system and still be able to upgrade, only this time

TIME FOR A LITTLE R&D

Find out more about the technology, concepts and new developments online

INTEL RESEARCH & DEVELOPMENT

www.intel.com/labs

The Intel corporation is behind all kinds of technologies that we take for granted today and works in conjunction with many other manufacturers to create tomorrow's standards, such as PCI Express and Serial ATA.

HYPERTRANSPORT

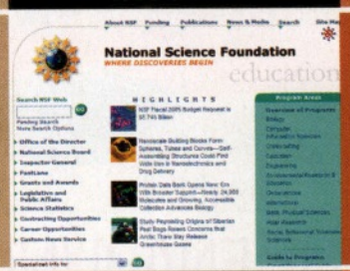
www.hypertransport.org

AMD's answer to PCI Express, HyperTransport is also being supported by ATI, Apple, Sun Microsystems, IBM and others. It's anticipated that HyperTransport will complement PCI Express rather than compete with it.

NATIONAL SCIENCE FOUNDATION

www.nsf.gov

Part of the US government's research wing, the NSF is federally mandated to keep the American taxpayers up to date with the projects it's working on, so there's always plenty of material on offer.



HP LABS

www.hpl.hp.com

Set up to further HP's product ranges, the HP Labs also investigate next-generation computing and are currently home to Dr Tim Spiller, one of the leading practical theoreticians in quantum information processing.

TECHNOLOGY RESEARCH NEWS

www.trnmag.com

Covering a wider remit than the other websites mentioned here, TRN is an excellent source of quick and easily-digestible information on all kinds of new technological breakthroughs.

IBM RESEARCH

www.research.ibm.com

Despite a stodgy corporate image, IBM is at the forefront of many technologies, many of which are detailed here, including nanotechnology and its well-publicised supercomputers.

2002

The PCI Express standard is approved and although it maintains compatibility with all existing hardware and software, it provides a two-way connection. Data is transferred in packets, much like it is over the Ethernet.

2003

The first serial ATA standard is released in February to replace the venerable ATA (now called parallel ATA) interface. Although the initial spec only improves throughput by 17Mbps (150Mbps compared to 133Mbps), SATA II promises to double and then quadruple the throughput, reaching 600Mbps in 2007.

2004

Late in the year, the first motherboards with PCI Express support will appear. nVIDIA and ATI announce support for the standard, with their future high-end products launching exclusively for PCI Express.

2005

The first external graphics cards are released using the PCI Express standard, and offer high levels of gaming performance. Creative Labs launches the first such device to accompany its external soundcards using 3DLabs' graphics technology. nVIDIA- and ATI-based solutions follow from third-party manufacturers.

2005

Late in 2005, the first true modular PC systems are launched by HP, Dell and Sony, sporting a special edition of Microsoft's Longhorn operating system that offers improved support for making the PC a home entertainment device, incorporating many features from Windows XP Media Centre Edition.

without suffering the anxiety attack that accompanies installing software or opening the case. If implemented successfully, the change to a modular PC will also alter the way in which the computer is perceived.

Currently, that beige or black box that's sat under your desk is a personal computer, something that you experience in your home on a largely solitary basis, whether you're gaming online, working or playing pirated DivX movies. By making the computer modular, the PC will transmogrify into the HC, the home computer, a device that the entire household can enjoy the benefits of.

Fujitsu Siemens' Activy box is a cable box, ADSL router and digital media player all in one.

Individual modules

It'll also become a device that you'll want to have in the living room, instead of hiding it away in a spare bedroom or study – no, really. It's a process that, according to Andrew Humber, European PR manager for nVIDIA, is already happening. "The PC has become much simpler to upgrade and maintain and this is a crucial step to making it a platform that can be taken into any room of the house, not just the office, and be treated the same as a piece of consumer electronics like a hi-fi."

Consisting of several separate components, the modular computer takes the idea of adding/upgrading components to suit your needs then wraps them up in their own shiny individual casing. A base unit that contains the CPU, RAM, hard drive, basic graphics and stereo sound, and an internal ADSL modem, forms the foundation of the modular computer.

This is what Mr and Mrs Everyperson from Solihull would buy in order to keep in touch with their kids who've left to go to university or outward bound expeditions in the Belgian Congo. It has everything they need for surfing the internet, using office software and downloading photos from their new digital camera.

If they need an optical drive, this would be the first additional component, or module. Instead of sliding into an internal drive bay, it would sit on top of the base unit connected by one of a selection of new interfaces. Therefore, rather than providing for two or three 5-inch drive bays in a PC case that may or may not be used, the space can be saved, reducing the form factor.

Other modules can then be added by more enthusiastic users as and when

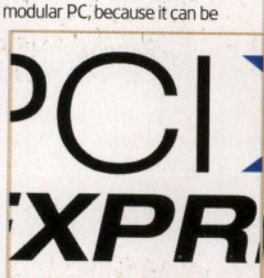
THE ENABLING TECHNOLOGY

Technology never stands still, but this is what's making modularity a reality

PCI EXPRESS

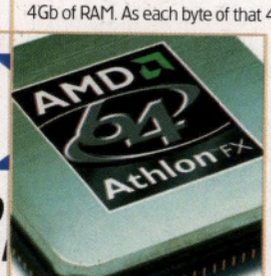
PCI Express is lined up to replace the AGP and PCI expansion slots on the motherboard, with the first compatible boards due for release later this year. Whereas the current PCI bus specification has a bandwidth of 133Mbps and the AGP 8x standard is theoretically 2,133Mbps, the specification for PCI Express is around the 1 Gbps mark. The PCI-SIG, which is in charge of the standard, believes that a bandwidth of approximately 16Gbps is achievable in the near future. Remember that PCI Express is not to be confused with PCI-X, which offers a modest 533Mbps maximum bandwidth in its current state.

It's PCI Express that will enable the creation of a completely modular PC, because it can be used to link external components to the motherboard and CPU. Thanks to the inherent ability of the PCI bus to provide a greater amount of power than the AGP bus, manufacturers should be able to avoid making the connection bulkier by including a power lead. PCI Express has also enabled the development of the ExpressCard standard to replace PCMCIA peripherals. Intel, AMD, ATI and nVIDIA have all given their support to the standard. AMD even sees it existing alongside its HyperTransport I/O solution, unlocking the potential of future PCs by lifting bandwidth limitations. **www.pcisig.com**



64-BIT PROCESSORS

Will we ever see the day when you can press a button on a home computer and see it boot into its operating system almost instantly, like a PDA does? The answer is dependent upon several factors, not least the size of the OS kernel and the transmission speed of data from storage and the processor, but it'll happen one day. One method would be to abandon hard drives and adopt flash memory as a long-term storage device. Imagine how fast a PC would boot if it didn't need to trawl through the hard drive, but instead, loaded the OS directly from a flash-based memory, like your RAM is composed of. But until the 64-bit processor was developed, there was no way a single CPU could address more than 4Gb of RAM. As each byte of that 4Gb (all 4,294,967,296 of them) is made up of 8 bits, a ceiling is reached beyond which any extra RAM simply becomes a fifth wheel. It's sat there, vacant, while your PC wonders what it's all about because the processor cannot handle the increased number of calculations.



A bit has two values, on and off (1 and 0 for the binary-minded), and as a 32-bit processor can only handle 2 to the power of 32 calculations at any time, the 4Gb ceiling is hit. A 64-bit processor can handle 2 to the power of 64 calculations, which, without resorting to a sports jacket with leather elbow patches, lifts the ceiling from 4Gb to 18 billion Gb. **www.amd.co.uk**

SERIAL ATA II

The most established of the technologies that will contribute towards the shift to modular computing. It's rare these days to come across a mid- to high-end motherboard and not see that little plastic connector sticking out of the circuit board. Although the standard has been around for several years and Serial ATA supports a cable length of a metre (three times that of an IDE interface), it's never been taken outside of the case. However, at last September's Intel Developer Forum, the latest specifications for the external SATA II were unveiled to an expectant audience.

Among the higher bandwidth (300Mbps), operation and other useful-but-mindnumbingly-dull figures, was a prototype of an external SATA II connector. Spring clips and heavier shielding than can be found on its internal cousin are immediately noticeable, bulking the connector up for a more strenuous lifestyle outside of the case, as part of a physical standard for manufacturers. A SATA II version of Maxtor's OneTouch external hard drives was on show, connected to a PC by nothing more than a single, thin SATA II cable. "The ad hoc rules of the PC industry are quite strict and have to comply with either the 'same for less cost' or 'more for the same cost' ethos," comments Dave Everitt, European product manager for computation products at AMD. "Historically, only features that have met one or other of these rules have succeeded." SATA is as cost-effective as the old IDE interface, but boasts far greater performance. **www.serialata.org**

BALANCED TECHNOLOGY EXTENDED

BTX for short, this is Intel's initiative to deliver a PC that is cool, quiet and small. It follows on from the Big Water concept that was floating about around three years ago. It sprung up originally because processors were generating increasingly higher temperatures as clock speeds were ratcheted up, and this necessitated bigger, louder cooling fans over the processor heatsink. It also required bigger case fans to maintain an effective level of airflow through the case. BTX aims to overcome this by offering a number of advantages over the traditional motherboard and PC case design. First, everything on the motherboard is kept as low-profile as possible; in a demo PC shown at the September 2003 IDF, a PCI Express graphics card was mounted horizontally over the motherboard.

The BTX concept also reworks the traditional method of cooling via airflow. Two case fans are used, one to suck cool air in and a second that blows it out and acts as a cooling fan for the processor. The fans have been redesigned and now feature what is called a stator, which looks like another fan but is fixed in place over the rotating blades. The stator has one more blade than the fan itself and channels air into the case more efficiently, so reducing noise. The airflow within the case is improved thanks to a new layout and is channelled over the graphics card, increasing the effectiveness of cards with passive cooling technologies. **www.formfactors.org**

required. Want to use your PC as an MP3 server? Add a second hard drive to boost capacity and also provide a standalone MP3 jukebox. Combine it with soundcard module (we shouldn't really call it a 'card' but it's force of habit) to output the music to the surround sound speakers you've installed around the room, and you've got a replacement for your ageing home stereo.

The DVD drive enables you to play CDs and DVDs; connect the external graphics to your TV and you have a home cinema solution that's future-proof for streaming movies from the internet. Because the modules are all operable independently of the base CPU module (Creative's Extigy was often used as a standalone Dolby Digital decoder, for example), there's no wait while Windows boots and no fan noise, as the CPU isn't being powered.

The unfriendly PC

It's largely this issue that sets today's PC apart from other home entertainment devices. It's not the fact that it's capable of so much more than a TV or set-top DVD player; it's that it's still not as user-friendly, despite advances in this direction.

"The PC is currently the most powerful device in the home," observes Darragh O'Toole, European brand manager at Creative, "yet it is heavily under-utilised due to lack of understanding of its potential, and also due to its reputation as being specialist and unfriendly to the average human. PCs need to be running operating systems as bullet-proof as your CD or DVD player, where you can power on/off for 10 years without ever expecting it to do anything more troublesome than get stuck on a damaged disc."

Until the day arrives when you can fire up Windows on a home computer in the same time as you can on a Pocket PC, the fact that the individual components of this modular system can operate independently of the CPU is key.

This changes the PC from something that most people are used to leaving in the spare room or home office, into an integral part of a home entertainment system. It's an idea that's already familiar to consumers, according to O'Toole, "based on their usage of component hi-fi systems or using a video, DVD or games consoles with their TV, where the base unit – the amplifier or the TV – is the hub through which all other devices connect".

So, when will we see these wondrous beasts? Well, they're not far off, as we've mentioned, and you can see in the panel to the right that a lot of the technology to make the modular home computer a reality already exists. Many more have recently been, or are approaching being, approved and standardised among the IT big boys. Based on research and conversations with many of the industry's leading figures, it's entirely possible that you'll see a truly modular PC as soon as the end of 2005.

> "BY MAKING THE PC MODULAR, THE PC WILL TRANSMOGRIFY INTO THE HC, HOME COMPUTER."

I want one!

In the time remaining between now and then, products using PCI Express and Serial ATA will become more prevalent as manufacturers get to grips with the new standards and what they can offer to modular computing. Before long, we'll see the first external graphics cards that can match the performance of any internal device. The fact that modular computers will be cheaper, smaller, faster and quieter is only to be expected, but the fact that they're modular – and the benefits this brings – will change the world's perception of the computer in the home. **PCF**

Launched two years ago, Fujitsu-Siemens is discussing releasing a revamped version of the Multitainer.

TOMORROW'S WORLD, TODAY

There are already products available that are pushing the modular concept...

APEXTREME

It's not so much the fact that it's aimed at the living room, but that it's the first home product based on VIA's next-gen Spearhead Platform, a low-power x86 system that's designed to be interoperable with other devices. VIA licenses the platform to OEM and CE manufacturers for use with their own product range.
www.discoverconsole.com

SHUTTLE XPC ZEN

The chassis that started it all – with one optical drive bay and only two expansion slots as standard, it didn't seem destined for greatness. But innovative cooling technologies that reduced fan noise and cute-as-a-button looks secured its future, with the latest model, the XPC Zen, featuring an external power supply.
www.shuttle.com

CREATIVE AUDIGY 2 NX

Creative was the first hardware manufacturer to realise that not everybody had a) the room or b) the inclination to install a PCI soundcard into their PC. The Audigy 2 NX is the latest external soundcard to come from the company, with an all-new, even more capable model being rumoured for release in the first half of 2004.
www.europe.creative.com

LOGITECH DINOVO MEDIA DESKTOP

A wireless desktop set is nothing new, but the DiNovo took the concept a step further, adding a media player remote control. Bluetooth-equipped, the media controller has an LCD screen that enables you to see what's happening with your MP3 player, meaning an end to flicking to the monitor to see which track is cued up.
www.logitech.com

WESTERN DIGITAL CAVIAR SE

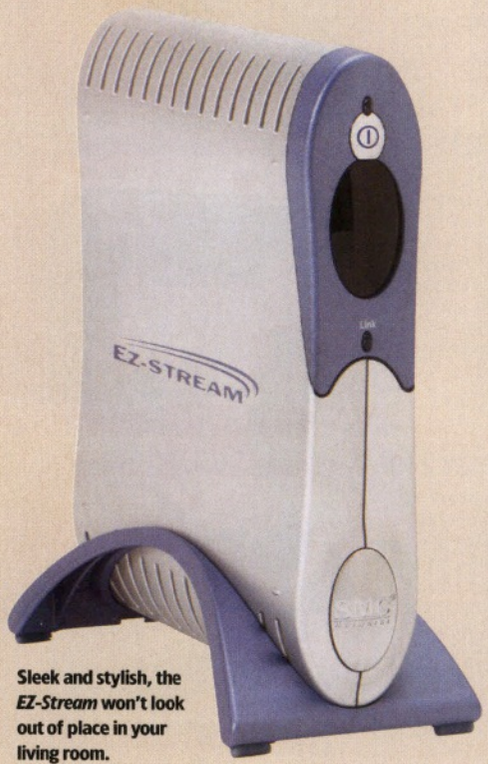
Capacities up to 250Gb mean that there's plenty of space for digital media here, and it is particularly suited to recording live TV via a tuner card for TiVo-like performance. It's not an external product, of course, but requires only the Serial ATA cable to connect to it, not a four-pin molex plug.
www.westerndigital.com

PHILIPS JACKRABBIT

An external combi-drive, the Philips has the unique ability to act as a standalone MP3, CD and DVD player when it's hooked up to a set of speakers or TV, without having to do anything different from when it's plugged into your PC. An infrared remote control means you don't even need to get out of your armchair to operate it.
www.philips.co.uk

Streaming media the easy way

Want to view videos, photos or listen to music? **Mary Branscombe** connects your files...



Sleek and stylish, the *EZ-Stream* won't look out of place in your living room.

There are plenty of wireless media receivers that plug into your hi-fi or television, enabling you to listen to MP3s or view your digital photos away from your PC. SMC's EZ-Stream is unusual because it connects using 802.11a, 802.11g or 802.11b. The faster connection means that as well as using it for music and photos, you can stream video from your PC. Remember, video clips that look fine displayed in a small window on your PC may not look quite as good when they are played full screen on your TV, but the EZ-Stream solves this issue.

You can also listen to internet radio through the EZ-Stream. And while most devices connect to your hi-fi or TV, the EZ-Stream has two separate cables so you can display the images – and the interface – on your TV screen, while playing streamed music through your hi-fi. Setting up doesn't take as many steps as with other receivers because you can do it from your TV. When you first plug it in, it will try to find your wireless network (although this is unlikely to work unless all your network equipment comes from SMC). You can use the remote control to choose the correct network settings and you don't need to tell it what kind of wireless access point you have – just fill in the name a letter at a time.

You can't just browse the files on your PC; you need to mark which folders have media files in them so that the *MediaServer* software can build the menus you see on the TV, and rebuild them when you add new files. See below for how to set the EZ-Stream up in order to access your favourite files easily. **PCF**

CONNECTING THE EZ-STREAM

Plug it in, set it up and choose your entertainment.

STEP 1 CHOOSE YOUR MEDIA

First, install the *MediaServer* software on your PC and tell it what files you want to be able to see from your TV. You can drag a folder in from Explorer or click **Add** and navigate to a folder. Sharing a folder with the EZ-Stream makes the sub-directories inside it available, too. Individual folders will show up as photo albums and playlists when you start browsing.

STEP 2 STAY UP TO DATE

The *MediaServer* software builds a list of all your files and that's what the EZ-Stream looks at, rather than the standard Windows file system. This means that new media on your PC won't show up automatically. Set how often you want the software to check for new files – you can always click **Update Now** when you add new files, too.

STEP 6 CONNECT TO THE TV

Instead of a combination cable with the RCA audio and video together, you get two separate cables, one for sound and one for the video stream. This makes it easy to choose whether you plug into your TV or pump the sound through your hi-fi instead. If you've got a network cable in your living room, you can connect the EZ-Stream and get smoother video streaming.

STEP 7 SET UP YOUR WIRELESS

When you turn on the EZ-Stream and switch your TV to the auxiliary input channel, you'll see the EZ-Stream interface. It will try to connect to your wireless network but as the defaults are for SMC equipment you'll probably have to change the settings. For most wireless networks, just type in the name of your access point and pick the automatic options like DHCP and no proxy.

STEP 8 REMOTELY IN CONTROL

The fastest way to navigate the EZ-Stream interface is with the dedicated buttons on the remote control – Audio, iRadio, Picture and Video. You can also search for a particular file by selecting one letter at a time when scrolling through the alphabet. Use the OK and cursor buttons to navigate through the menus and the Back button to jump up a level in the interface.

MEDIAMVP

Try the wired option for enjoying digital media on your TV.

More buttons on the remote control means you've got all your TV controls to hand, too.

It's not as stylish as the EZ-Stream and it's not wireless, but that means Hauppauge's MediaMVP (Music Video Pictures) gives you full-motion video at top quality. It also has a SCART connector to plug into your TV so you don't have to fiddle about with connectors and cables; the SCART cable plugs into the back of your TV like any other component. The remote control has volume buttons, channel controls and Teletext buttons as well as controls for selecting, pausing and fast forwarding through your images, music and video clips.

You don't get as many formats as you do with some receivers – just MP3, JPEG, BMP, GIF and MPEG 2 video, so no WMA or AVI files. These are the most common formats and if you're using your PC as a PVR, you'll have MPEG recordings of TV shows anyway. You also need to run the MediaMVP's software under Windows 2000 or XP and, as usual, leave the PC on. You can only use one MediaMVP unit with your PC but Hauppauge is working on software that will let you drive up to 12 MediaMVPs from one PC. Also, you can add folders to the list of what you can access with the MediaMVP via your TV screen. If you can run a network cable to your TV without tripping over it, the MediaMVP's neat touches make it worthwhile – and it's a bargain at £100.

The MediaMVP is easy to set up and use, and you can access some of the controls, such as folder settings, via your TV screen rather than your PC.

STEP 3 TUNE THE RADIO

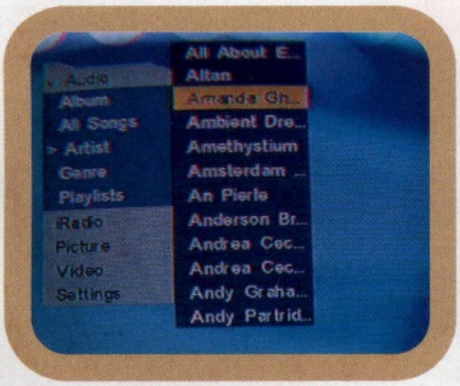
The EZ-Stream can play internet radio stations as well and it comes with four preset stations of music. You can easily add others yourself. You need to know the URL for the radio stream itself, not just the main website, and that can be tricky to figure out. Try the URL from the 'Listen now' link and be prepared to experiment a little.

STEP 4 CHECK YOUR CONNECTION

The Network Connection tab doesn't tell you if the EZ-Stream is running, just how *MediaServer* is getting online. Click **General** instead and search for the receiver. Change it to use DHCP then double-click it and make any changes you need. This is simpler than using the on-screen wizard. You can also set the software to run automatically with Windows.

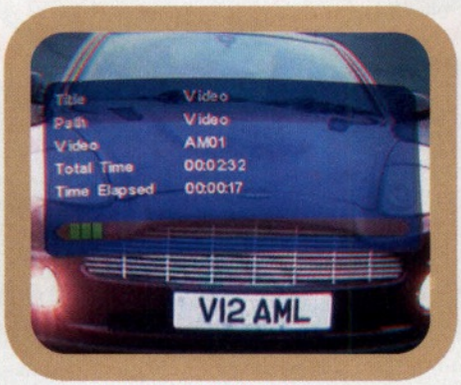
STEP 5 LEAVE IT ON

You need to leave your PC switched on and the *MediaServer* software running so it can stream your files to the EZ-Stream box. You don't have to leave the software running in a window, though; minimise it and you won't even have an application icon to distract you. Click the icon in the system tray to open the window if you want to add more folders or a new radio station.



STEP 9 CHOOSE YOUR MUSIC

Click the Audio button or scroll down the menu and you can choose what you want to listen to by artist, album, genre or playlist (which can be a normal playlist or a folder on your PC). Pause on an artist and you will have access to all their music; press OK on the remote and you can choose a particular song to start with.



STEP 10 WATCHING VIDEO

There aren't the same options for videos; just pick from the list of filenames on screen. The EZ-Stream downloads some of the file before it starts playing and downloads the rest in the background – you really need 802.11a or 802.11g to get a smooth picture but you can manage with 802.11b if you pause occasionally. Press Info to see how much of the clip you've seen so far.

STEP 11 THE BIG PICTURE

Select the Pictures section and you can look at your pictures (including album art for your music) or browse a particular folder by choosing Photo Albums. The EZ-Stream shows your photos as a slide show and if you've already chosen some music, it carries on playing this in the background. Click Info to find out which photo you're looking at – or just sit back and enjoy.

PLAY – ENTERTAIN – CREATE

ATi Get in the GAME™

HALF-LIFE®2

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Gameplay

Games news/Previews/Reviews

NEW GENERATION

Quite frankly, it's about damn time. You know and I know that the PC is the best platform for gaming in the world today, but not many games developers have seen fit to help us prove this for a while now. I mean, come on – when was the last time a game really made you catch your breath with shock and wonder? If you have been missing that special feeling, might I point you in the direction of *Far Cry*? Its merits as a single-player game have been a matter of some discussion among the bickersome denizens of the *PCF* office (find out the results on p.64, incidentally), but one thing none of us disagreed on was that the game is fabulously beautiful. At last, someone's shone a light in the direction PC games need to be heading in graphically, and you certainly won't catch us looking over our shoulders. It's a shame that *Battlefield Vietnam*, also reviewed this issue, sports such antique visuals, but hopefully now the bar has been raised, this sort of nonsense won't happen again.

alec.meer@futurenet.co.uk

DO YOU REMEMBER THE FIRST TIME?

Take our sweaty hand for a trip down gaming's memory lane.

THIS MONTH STUNT ISLAND

While we're well aware of how important they've been to the genesis of the PC as a gaming platform, there aren't many flight sims that we look back upon with the same degree of fondness as the – alright, we admit – more violent gaming genres. *Stunt Island* is one of the exceptions, a beautifully imaginative piece of work which realised aimless flying only goes so far – what people really want is to show off. This was done by performing outrageous, and often very difficult, missions in your plane of choice, the entirety of which was recorded as an editable movie. Once you'd finished the stunt, you could edit it yourself in the game's included movie-making facility, add in music, effects, voice-overs and camera angles, then share it with your bemused mates. No one's recreated this yet, astonishingly. One mission sticks in the mind particularly – swooping underneath the Golden Gate bridge, approaching the dreaded island prison of Alcatraz, plucking an escape-hungry convict from a tower on top of it, then fleeing successfully into the sunset. That's a wrap, ladies and gentlemen.

MEET THE PCFormat TEAM

DAN GRILIOPOULOS
New revelations about his ancestry allow us to call Gril a Greek Welsh Jewish gypsy. Now *that's* ethnic.
PLAYING
Etherlords II

JON HICKS
Dammitall. We're running out of amusing things to do with Jonty's head. Any ideas, readers?
PLAYING
Battlefield Vietnam

KIERON GILLEN
Forced to answer the immortal question: "Is that your piss on the floor?" posed by his housemate recently.
PLAYING
Far Cry

JOHN WALKER
Will John get into trouble if we reveal here that he's been skiving from college to finish his freelance for us? An intriguing experiment...
PLAYING *Planetside*

JIM ROSSIGNOL
Award-winning novelist of the future Jim somehow managed to review 87 GameBoy Advance games in a single weekend.
PLAYING *Splinter Cell 2*

KELLY DUDLEY
Married an entire clan of Ukrainian jugglers. (Maybe.We're too lazy to ring and ask what she's been doing).
PLAYING
Armed & Dangerous

OUR KEY PROMISES

1. We only review finished games
We never review code that isn't signed off as finished by its publisher. That means we can test thoroughly before we make recommendations.

2. We always say what we think
Our reviewers are passionate about games, but we're absolutely incorruptible. We cannot be bought or bullied, and that's company policy.

3. We match games to reviewers
The combined experience of our games reviewing panel is unsurpassed. We love games, so every game is reviewed by a hardcore fan of its type.

4. We give you a clear recommendation
You want to know what to buy next. We use boxes, diagrams, sidebars and pictures, combined with clear verdicts, to make that easy.

5. We listen to you
Of course, we're always right, but you may disagree entirely. Join us at **http://forum.pcformat.co.uk** to share your gaming opinion.

OUR SCORING SYSTEM

0-19% Unplayable, lazy, shoddy. Insulting
20-49% The germinal of a game, underdeveloped
50-69% Solid ideas, built on precarious foundations
70-79% Good: a worthy, well above-average game
80-89% Just short of genius: wins a *PCF* Silver Award
90+ Exceptional. A *PCFormat* Gold Award winner

COMING SOON

Changes are afoot in your favourite PC gaming section...

As you'll have read elsewhere, from next month *PCF* is changing. For the better, of course, especially if you're a gamer. As well as, mercifully, fewer photographs of Alec, you can expect to find some of the following in the new-look games section:

MORE ONLINE GAMING
Xbox Live? Dead in the water, more like. For several years now the PC has been very much the premier platform for online and multiplayer gaming, and a whole culture has spun out of this. So, we're going to report in much more detail on online games and gamers, there'll be *PCF* multiplayer servers, and you're going to see us cropping up in some unexpected places...

DEFINITIVE REVIEWS
We love PC games more than anyone alive, but that doesn't mean we're blindly enthusiastic. Even more so than it is now, *PCF* is going to be *the* most authoritative PC games mag – and, unlike other publications, you won't catch us giving away pages and scores just to get the word 'exclusive' on the cover.

INTERACTIVE FEATURES
It doesn't stop with just the page – our coverdisc will include video footage and bonus previews of new, exciting games.

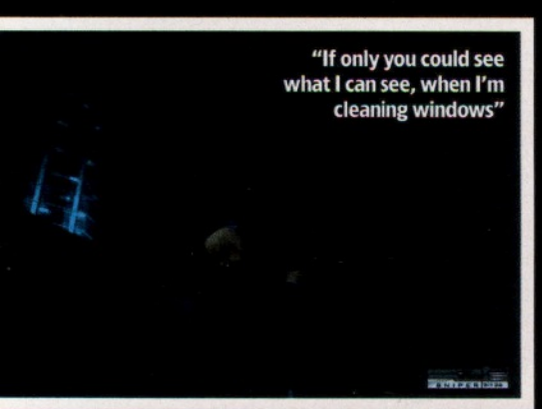
SCOOPS/NEWS/GOSSIP

A trio of sneak 'em ups pave the way for a year of stealth.

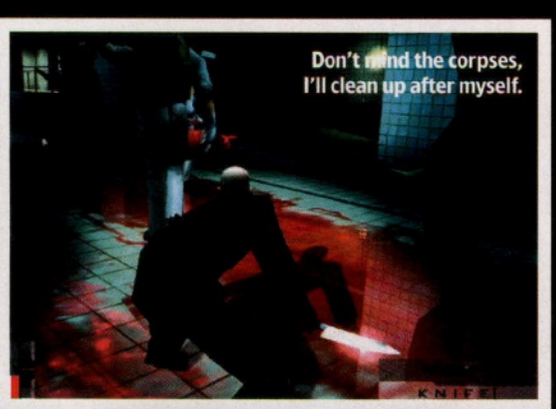
↘ **ACTION/ADVENTURE**

HITMAN: CONTRACTS

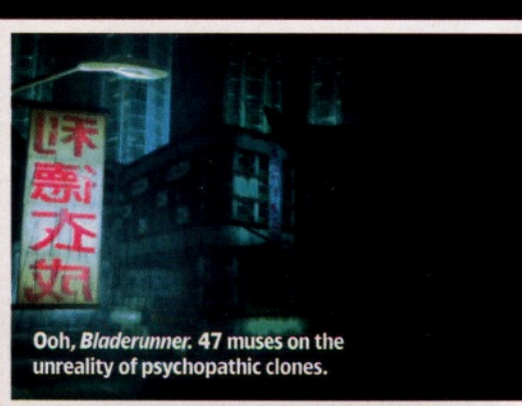
Sadistic psychopathic assassin segues smoothly into second (sought-after?) sequel, says Dan Griliopoulosss...



"If only you could see what I can see, when I'm cleaning windows"

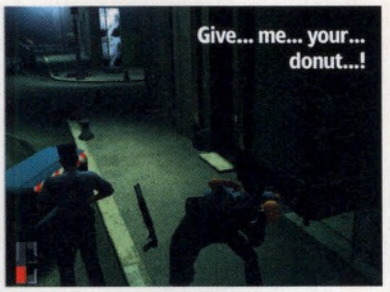


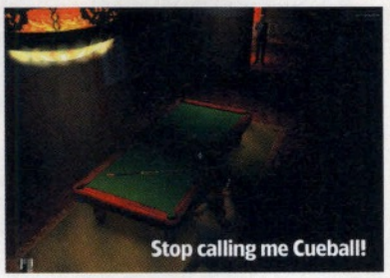
Don't mind the corpses, I'll clean up after myself.



Ooh, *Bladerunner.* 47 muses on the unreality of psychopathic clones.

MUST SEE SCENE **As 47 investigates the meat-king's bad-taste bop, some gruesome sights make themselves known. One: a dismembered corpse. Two: the meat hook and what you can do with it. Three: this large fat man, wandering about, gibbering to himself in nowt but an apron, butcher's cap and bloodied Y-fronts.**


Give... me... your... donut...!


Stop calling me Cueball!

DEVELOPER
IO INTERACTIVE

PUBLISHER: EIDOS
WWW.HITMANCONTRACTS.COM
02086363000

Thor Frolich, IO Designer

WHO ARE THEY?
IO Interactive is a strange venture, backed as it is by Nordisk Film & TV A/S, and the game developer Reto-Moto. Only in Copenhagen, eh? They've developed proprietary technologies for 3D gaming and then put these to use in cross-platform games, like the original *Hitman: Codename 47*, *Hitman 2: Silent Assassin* and 2001's co-operation with Electronic Arts, the well-received *Freedom Fighters*.

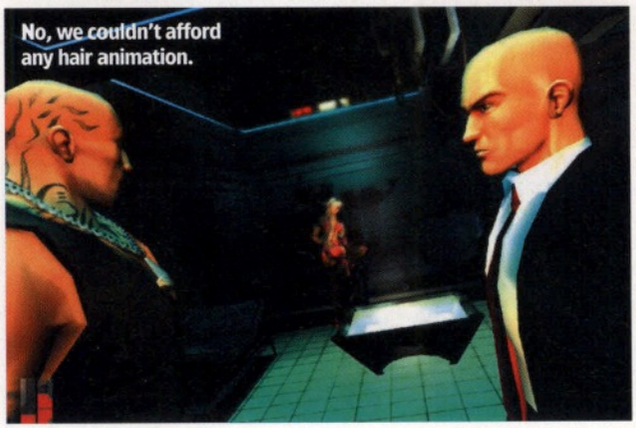
WHAT ARE THEY DOING?
Joining the commune and chilling out, man... or rather working on a new project; what with the US success of *Freedom Fighters*, we're sure the temptation of a sequel will be too great to ignore.

The human heart's a fickle thing. Consider the case of 47. A man who killed his forty-six brothers because he didn't want to go into the same career as 'dad.' OK, he might not strike you as a particularly appropriate recipient of your sympathy; but when you discover that his brothers were psychopathic clones, and his dad's career was mass-murderer for cash, he can garner a bit more of a sympathetic glance. On his way to the institute, that is. Seeing him stagger into his bedroom, clutching his gut Rocky Racoon-style, and proceeding to collapse on the floor, is likely to elicit slightly more in the way of understanding thoughts. It's obvious the mission he's just been on didn't go so well, as he passes out and his pistol skitters across the floor. As Baldy lies bleeding to death, his life flashes before his eyes. It's a bit like *Hitman: the bloopers*, or *Hitman: what happened next?*' or even *Hitman: the season highlights*. Baldy flashes in and out of consciousness, and all the highlights of his life shoot past, just slow enough for you to have a play of them. As they are dreams, you can try them over and over, and they're pretty much unconnected to each other, so there's no need to play a dozen missions in the snow, followed by a dozen more in the desert.

DUE DATE
April 2004

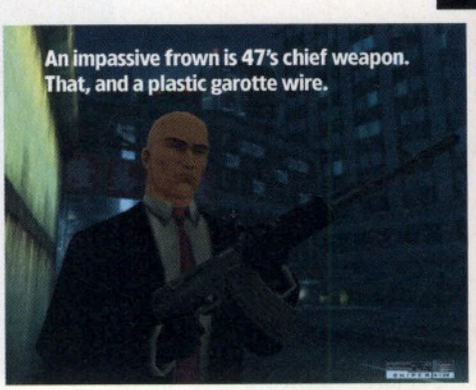
"I swear, the psychopathic mobster who got away was *this* big!"

Baldy's first dream takes him back to a hit on two Russian businessman, in distant Siberia. Mark Allen of publisher Eidos explains "They're busily involved in building dirty bombs, and 47 is hired to take them both out, and sink the submarine where the bombs are stored. We call it the 'Snow Job.' 47 does his usual thang when he arrives, throttling a Russian trooper, concealing the body and stealing his uniform." He then picks up a box of groceries, and walks calmly past the assembled guards into the barracks where his first target, businessman Fabian Fusch, is about to have dinner, before going off to meet General Burkov, to discuss the bombs. After a quick conversation with his contact, Fabian's chef, 47 dopes Fabian's soup with laxatives, and follows him to the bathroom. Here he garrotes him and changes


No, we couldn't afford any hair animation.

HITMAN, WITH A RHYTHM STICK.
Or boomstick perhaps. But which boomstick?

If you stick a big wig and a black jacket on Baldy, we reckon he'd look just like Max Payne, and the new game plays very similarly to the Rockstar progeny, albeit on larger levels with tougher enemies. Another thing 47 shares is his larger selection of murderous implements. This stretches from a selection of sniper rifles (including the infamous Dragunov), to more close-in items, like poison, cleavers and the meat hook; this particularly horrible item is thrust through an unsuspecting victim; once embedded he can be dragged over to the abattoir's cold room, and hung up, out of sight. The minigun meanwhile, will have you screaming 'It's in the trees, Blaine!' as it spews thousands of bullets (and we don't mean David.)


An impassive frown is 47's chief weapon. That, and a plastic garotte wire.

PRESS PASS?

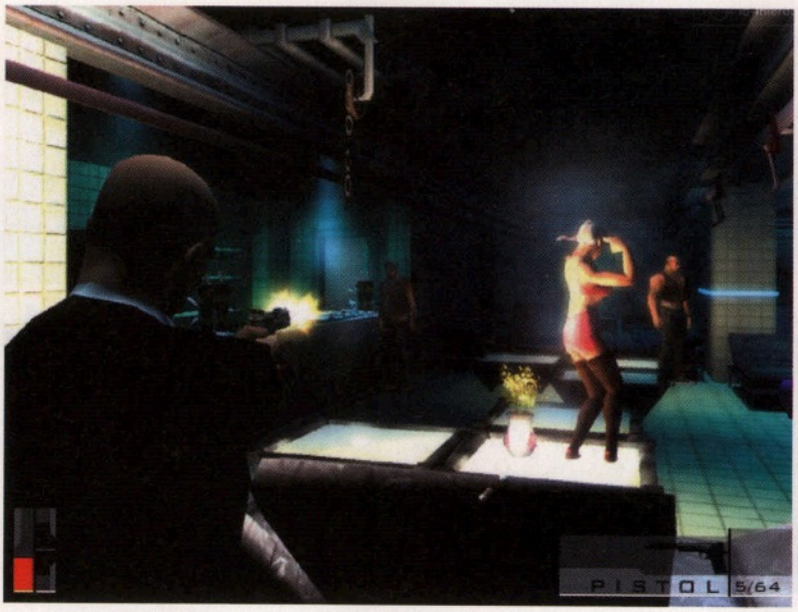
Contracts will be more gripping than a club handle.

THEY SAY

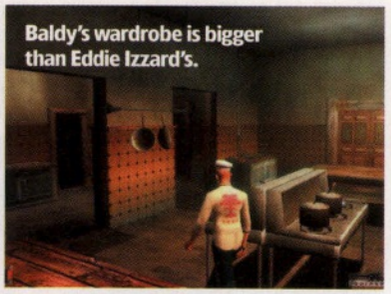
LEGALESE *Hitman: Contracts* explores the dark psychology of killing for a living and promises to be the most disturbing episode in the series. The game delivers more action-packed and suspense-filled missions with a greater variety of ways to make the perfect kill. An increased arsenal of firearms, close combat weapons and new 'take-down' moves will be at your disposal, allowing you to perform a wide range of brutal 'hits'.

WE SAY

ILLEGAL-ES *Contracts* looks like more of the same. The addition of more weapons and bigger levels, and a return to the civilian areas of the first game, should make it last and be more exciting than a dog-fight in a sausage factory. But the physics are fundamentally the same. The new-look, whooped-up appearance of 47 and his environs makes it look *Max Payne*-alike.



Dance, you low-down steenkin' son of a gun. I said Dance!



Baldy's wardrobe is bigger than Eddie Izzard's.

47's buttocks were motion-captured.

into Fabian's masked ski-suit (the mask decreases the chance of your being spotted enormously, if it's part of a costume.)

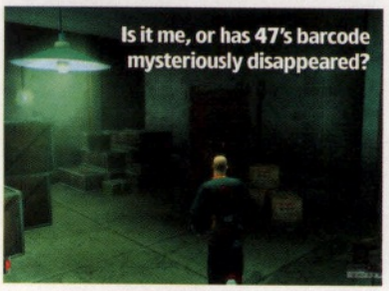
Then, of course you toddle off weaponless to murder the general disguised as Fabian. Alternatively, you could do the whole mission violently, shooting Fabian down as he goes to his meeting from a nearby guard tower. Or you could wait until Fabian and the general are in the submarine together, before blowing that up. Whatever you decide, the mission has lost none of the first two game's toughness. And it's certainly gained darkness. Even when you shoot people down, if you don't make sure you've finished them off, they can get up and crawl to an alarm switch (sometimes, you're in luck and they bleed to death), causing endless problems. You must execute writhing enemies and drag their corpses away, before they're found by members of the public.

The game engine's been tweaked up deliciously as well. In the bathroom, you see the new reflection effects, giving you the opportunity to see 47's murderous slim-Brando features outside of a cut-scene; there's even dynamic urine on the floor, partially reflecting everything about it. Go outside and the snow in the air blows across the snow on the ground, particle effects making it look realistic and blocking visibility. Bloom effects are everywhere, from the smoke spouting from a factory chimney to the breath on a trooper's face as he stands on guard duty. To maintain the dark confusing atmosphere, there's soft-focus visual filters, like those found in *Prince of Persia*.

Other dreams include the Sanatorium, where 47 exterminated his clones and his malignant boss. Another mission that 47's being sent on is to Beldingford Manor, where aristocrats have been hunting commoners for sport (now the fox-hunting ban's in, don't you know.) Then there's "A Ruckus in Rotterdam", where 47 takes on a biker gang.

The last of the dreams is of the event that left Baldy clutching his intestines like a shredded cummerbund. Mark Allen wouldn't be drawn on what this is, except to say that "it's the climax of all the dreams, the summary of all the missions, and it all ties in." With stirring music and Eidos backing it to the hilt, Baldy *(quit with the baldy comments – Ed)* won't need our sympathy for very long. **PCF**

"Baldy, why don't you put out that red light."

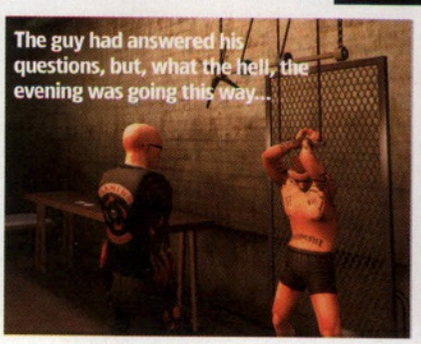


Is it me, or has 47's barcode mysteriously disappeared?

THE MEATKING

Butchers are people too.

One of Baldy's most disturbing missions is to investigate the disappearance of a young girl. Her parents find out that the girl was most likely abducted by the Jabba-esque Meat King, described as "an all-round nice guy, fun to be around." He's an abattoir owner, meat magnate and trademark holder for the phrase 'lard-arse', but the prosecution fails due to lack of evidence, which you find suprising once you enter his abattoir, where he's throwing a gimp party to celebrate his acquittal. Tracking his moronic brother (who wanders the party in pants and apron) around the enormous slaughterhouse, you come across a shrine where the girl has been dismembered and, erm, meat-hooked. *Hitman* has definitely got darker.



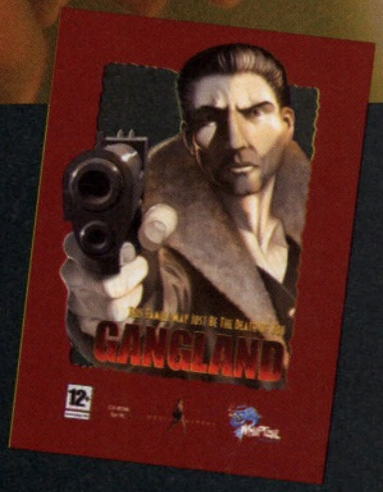
The guy had answered his questions, but, what the hell, the evening was going this way...

No, I'm not putting on Roger Moore's eyebrows. It's not that sort of disguise.

Gangland is not your everyday real-time strategy game. It offers a totally new gaming style mixing three genres: real-time strategy (RTS), role-playing game (RPG), and simulation (SIM), with a large dose of high paced action thrown in for good measure.

You must move fast in combat. Make tactical use of the environment, use med-kits, reload your guns, crouch and take cover all with the right timing so you stay alive.

So if you think that these pliers are for bending wire or pulling out bent nails, maybe you should think a little differently before you start playing.



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DEVELOPER
ION STORM

PUBLISHER: EIDOS
WWW.THIEF3.COM
020 8636 3000

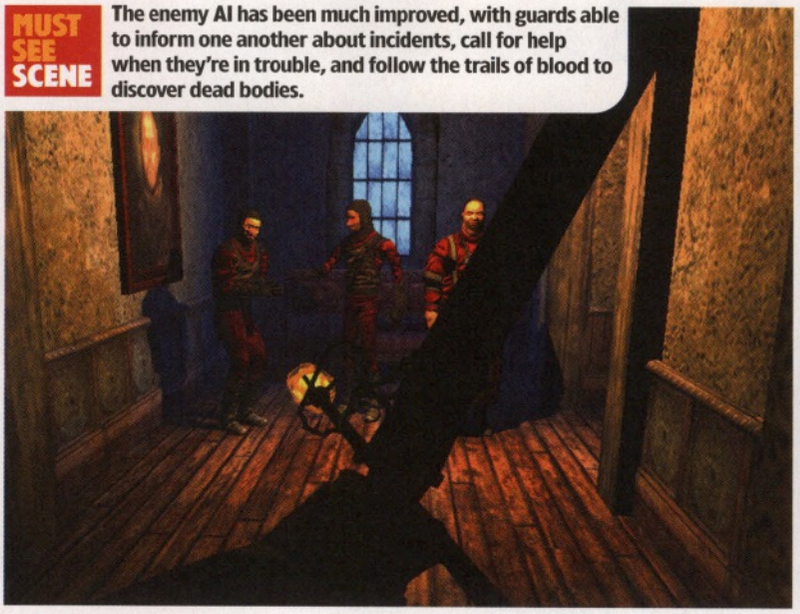
Randy Smith, project lead on *Deadly Shadows*

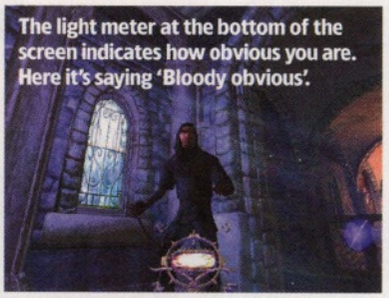
WHO IS ION STORM?
Many of the team are alumni of Looking Glass Studios, the development house that brought us some of the greatest PC games of all time, from the seminal *Ultima Underworld* RPGs to the genre-defining *System Shock* games. Ion Storm is also, of course, responsible for the *Deus Ex* titles, and it's safe to say that Warren Spector and co. have proven to be the most consistently inventive developers in the world. It's hard to be over-enthusiastic when considering them.

WHAT ARE THEY DOING?
Having finished *Deus Ex: Invisible War* and now wrapping up the final ribbons of *Thief: Deadly Shadows*, common sense would suggest they'd sit back for a bit and relax. However, history suggests they'll plough straight on and discover a new way to reinvent and improve the most important gaming wheels. And probably *Deus Ex 3* and *Thief 4*.

DUE DATE
June 2004

MUST SEE SCENE **The enemy AI has been much improved, with guards able to inform one another about incidents, call for help when they're in trouble, and follow the trails of blood to discover dead bodies.**





The light meter at the bottom of the screen indicates how obvious you are. Here it's saying 'Bloody obvious'.

The new dynamic shadow technology should greatly affect your tactics.

↘STEALTH-'EM-UP

THIEF DEADLY SHADOWS

The lucifugous John Walker meets the shadow-loving *Thief*.

There was a time when the ex-Looking Glass team at Ion Storm couldn't fail to generate frenzied excitement with a new game. That time was up until about three months ago. And then there was *Deus Ex 2*. Although still a great game, its failure to revolutionise gaming as we know it was a genuine letdown. With the hauntingly familiar dual Xbox/PC release, will *Thief*'s phenomenal calibre be powerful enough to see any similar concerns disappear in the dead of night?

Playing the smoothly morose Garrett, master-thief and one-man army against the medieval oppressors, *Deadly Shadows* once more asks you to subtly and quietly even the balance of power in the city. While picking pockets and relieving people of their golden candlesticks, of course. The previous two games were not just genre defining, but genre creating. And in this new, modern world, as consoles muster together enough power to play with the big boys, this third portion of the series is hoping to repeat the magic for a much wider public. But does this mean compromise? We can't help but be fearful of the limitations the Xbox seems to have imposed upon *Deus Ex: IW*. Has Ion Storm learned its lesson? The only sensible thing was for *PCF* to ask project lead, Randy Smith.

"Fans will be pleased *Thief: DS* is an authentic sequel that follows in the footsteps of the previous games."

"Not to be too self-complimentary, but we've done a superb job. Take the story, for example. All of the elements that successfully made *Thief* and *Thief 2* are still there: Garrett, the Hammers, the Keepers, the city, all of it. The hardcore fans will be very pleased by the consistency and the new territory covered by the story. However, all the fiction presents itself under the assumption that you've never played the previous games, so new players will get a formal introduction to those elements."

Ironically, Ion Storm is at something of an advantage thanks to the huge popularity of games that have mimicked its creations. *Metal Gear Solid* and *Splinter Cell* have had all manner of people realise the joy of the creep, while the similarly successful *Hitman* series blends stealth and sadism. The time seems right for *Thief* to rightfully reclaim its throne. As the man says, "*Thief* is often referred to as the ultimate stealth game. Hardcore fans will be pleased that *Thief: Deadly Shadows* is an authentic sequel that follows in the footsteps of the previous games by emphasizing the stealthy approach to problem solving. New fans should find the gameplay understandable and accessible, and if they come looking for a fun stealth game, they'll find what they're looking for."

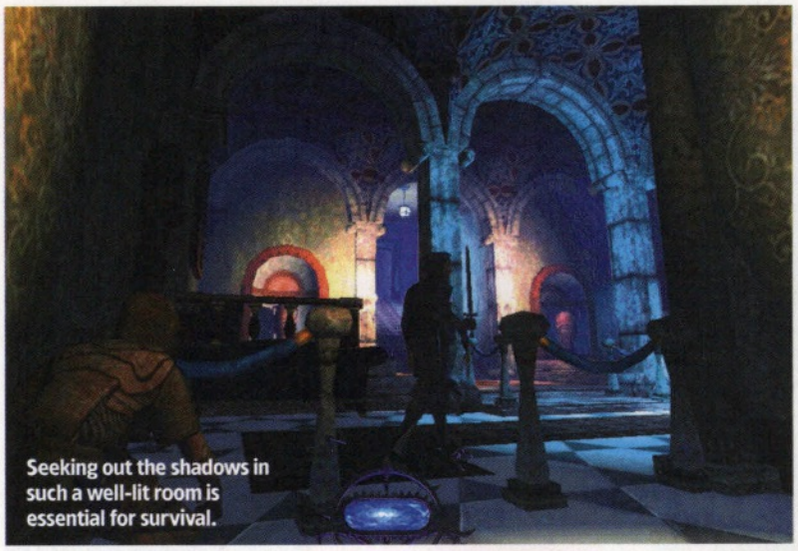
Alter egos

Our other worry alert was the news of a third-person perspective in this latest incarnation. We always managed well enough with just the first-person in both previous games, so could it be an innovation too far? Smith argues not. "Third-person gives the player a lot of new options, and while we playtest we find

FREE FOR ALL

Clearly, Ion Storm has been playing a lot of *Vice City*.

An enormous innovation for *Deadly Shadows* is the new between-level sections, when you can roam free-form through the city, robbing anybody you wish. But this isn't meant to be a throwaway bonus. Smith claims you can use this time to scout out routes for your next mission, meet with various individuals about town for information, and stock up on provisions before heading off into the next challenge. If this really offers what it promises, it could be a dynamic shift in the way games structure themselves, setting a new standard. Or it could just be a neat gimmick. We shall see.



Seeking out the shadows in such a well-lit room is essential for survival.

How to spot a badly dressed thief. Lesson one: this man is a badly dressed thief.

Another victim of the terrible deadly arrow disease.

Third-person offers an advantage now enemy AI has learned to sneak up behind.

I don't know much about art, but I know what I like to nick.

ourselves switching back and forth between the view modes dynamically, depending on the situation Garrett finds himself in." And first-person remains absolutely essential, the means to ensure that you're properly hidden, aided by the new feature of being able to see Garrett's hands and feet when looking down.

Kill switch

A unique twist in both *The Dark Project* and *The Metal Age* was the counter-intuitive nature of the difficulty levels. Usually, if you beef up the toughness, a game will throw more, tougher enemies at you. *Thief* asks you to attack or kill fewer. In fact, on the hardest difficulty settings, some levels disallowed you to kill a single man, no matter the charges. We've always suspected there's a little more to this than just a desire to be sneaky. "I prefer non-violent conflict resolution in games, partially because real-life violence is so terrible, but also because it makes for unique and interesting gameplay. Other members of the team might tell you the opposite, that they love killing everyone they come across. Luckily, our game fully supports both options: you can get through the entire game without ever laying a finger on anyone, or you can kill everyone you see," observes Smith.

This kind of freedom is what made players the world over sit up and take notice of *Deus Ex*, and it seems this remarkable ethos could be fully realised in *Deadly Shadows*. To offer a non-violent solution is remarkably rare; to offer both ends of the spectrum and everything in between is unique, and a helpful indicator of the depth of design that goes into the games.

But as proven with the pre-hype for *DX: IW*, can letting our expectations get so incredibly high be unfair? Should we expect so much of just one games company? "I wouldn't have it any other way," says Smith. "I didn't get into games to make derivative works, I wanted to make innovative material, to push the envelope, and I'm sure much of the *Deadly Shadows* team would say the same thing." **PCF**

PRESS PASS?

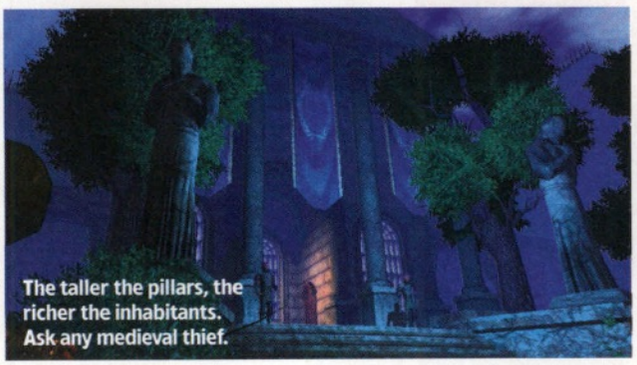
Thief: DS **need rely on no more than reputation alone. But that doesn't stop Eidos from making a terrible fuss.**

THEY SAY

STEAL "When working on *Thief: The Dark Project*, I used to walk home every night at dawn, involuntarily avoiding pools of light cast by streetlamps. I have little doubt that everyone who plays *Deadly Shadows* will find themselves having similar experiences."

WE SAY

DEAL The first two *Thief* games have been just so sneak-faced damned good, which means our hopes are high. As long as they haven't gone overboard on new features, and the dreaded Xbox release doesn't hold anything back, signs are positive for another classic.



The taller the pillars, the richer the inhabitants. Ask any medieval thief.

A MATTER OF PERSPECTIVE

When will we see a genuine second-person game, we ask ourselves.

There's been all manner of kerfuffle about the inclusion of the third-person perspective from the most dreadful of fans. But first-person is as present as it is correct, yours to use as much as you wish, and the only way to use a bow and arrow with any accuracy. Garrett has also grown some new nifty capabilities, which include setting up an ambush or peeking around corners, both best appreciated from that mysterious third person's eye. And as you can see from the screenshot, far right, it also gives you a hint when someone's trying to show you their sword at extra-close range.

PRESS PASS?

Is Elixir's press blurb a stroke of genius?

THEY SAY

GENIE-US "A tongue-in-cheek take on the spy thrillers of the 60s, offering the opportunity to play the villain as you control a secret island fortress complete with ice-cold beauty queens."

WE SAY

GENIE-AL Heavy on the set pieces, surprisingly short and without any multiplayer, *Evil Genius* might have a somewhat limited replay value. Yet the swinging sixties' humour should make Demis' masterplan pretty hard to thwart.

MUST SEE SCENE **Not since the days of *Dungeon Keeper* have we been given such a grand opportunity to sadistically victimise henchmen. *Evil Genius* would seem to be very determined to play things for laughs – fine by us.**

Beware the Alan Parsons Project! Mwah-ha-ha, and so forth.

Good guys always come last. Make sure that's the case.

Destroy the world with your giant 'laser'.

DUE DATE Autumn 2004

↘ STRATEGY

EVIL GENIUS

"Release the mutated sea-bass, and crank up the sonic oscillator!" yells power-crazed Dan Gril.

DEVELOPER ELIXIR

PUBLISHER: VIVENDI
WWW.ELIXIR-STUDIOS.CO.UK
0118 920 100

Demis Hassabis, Elixir's main man.

WHO IS ELIXIR? Demis Hassabis founded Elixir Studios in 1998; the company now employs over 60 people. Demis gathered some of the finest development talent from around the world for his team, veterans of ground-breaking titles such as *Theme Park, The Sims, Black & White, Dungeon Keeper 2, Colin McRae* and *Speedball 2*.

WHAT IS IT DOING? Elixir is planning two more games: one simulation, one strategy, though all details are firmly under wraps. While there, we learnt that one of the games was being signed by a big US publisher, and coincidentally discovered that Microsoft was meeting one of the execs for reasons unknown. Probably unrelated...

A slap from a studded glove wakes us with a start. The room is blacker than Oddjob's hat, and we appear to be hanging from our arms. "Funny," we think, "we don't remember ordering a BDSM-o-gram today." Then we remember the sealed train carriage, the closed underground station, and the blindfold and gag, and realise it must be the *Evil Genius* preview event at Elixir's top-secret location (it's somewhere in Camden). A projector screen flickers into life and, over silhouetted footage of divers performing a creepy water ballet, the disembodied voice of Demis Hassabis, founder of Elixir and the real genius (the jury's out on evil) starts telling us about his masterplan.

Pens? No, you must dye!

"As an Evil Genius, the aim is simple. To build up enough infamy, power and technology to construct a Doomsday Device, and bring the world to its knees." Fair enough. The first step is establishing your base, and there are two in the game: the first is located on a desert island, the second in the heart of an extinct volcano. There are 20 other locations around the world, but the Evil Genius isn't involved in them. Instead his henchmen siphon cash from these regions, or research acts of infamy, enabling you to steal the Eiffel tower, capture a top ballistics expert, empty the Prado, and so on.

Your half-dozen henchmen are a key part of your army. Ranging from Red Ivan (performer of the Cossack grenade jig) to the Matron, an elderly mace-wielding psychiatric nurse they are key to your success, controlling regions away from the base and defending you when you're at the base. They reign over your minions, expendable, flexible colourfully-coated fellers who do everything from researching mutants to entertaining guests in your luxury hotel (which acts as a decoy).

Agent Orange

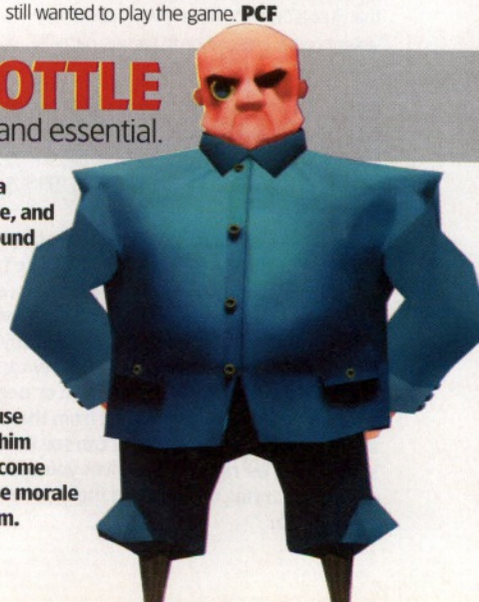
Increasingly tough agents sent by governments balance your army – everything from low-level thieves and saboteurs, to invincible Rambo and Amazon-style super-agents arrive, depending on how notorious you are. "Research allows you to discover the superagent's weakness – John Steel (James Bond type) has to be strapped to your Doomsday Device, the Bruce Lee hero has to be defeated in a kung fu tournament, and so on," gloats Hassabis. "The lower-level agents can be deterred by any of over a hundred traps, including Venus man traps, hidden rotating saws, enormous fans, flaming pits, mutant monkeys and faulty cash points..." As he said this, everything went black(er).

And then we woke up and it was all a dream, and JR was alive in the shower. But we still wanted to play the game. **PCF**

GENIUS IN A BOTTLE

Your evil avatar is customisable and essential.

There are three evil geniuses to choose from: a Blofeld type called Maximillian, a femme fatale, and a third one who might just be a wheelchair-bound Fu Manchu look-alike. Your genius inspires his minions to work harder, is key to several set pieces (such as taking over the global underworld), can gain notoriety by simply gloating over trapped agents, and if killed, means Game Over. (Though you'll want to see him killed just for the death sequences.) Because he's quite fragile, later levels see you keeping him away from the action, meaning his minions become lazier – if you don't interrogate them, they lose morale and defect, taking some of your gold with them.



RH+ blood cells from co-driver's bitten lip as a Lancia Delta Integrale slams into barricade.

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DEVELOPER
SHANGHAI STUDIO

PUBLISHER: UBI SOFT
WWW.PANDORA TOMORROW.COM
0905 482 0109

Chen Yu, one of the 200-strong development team.

WHO IS SHANGHAI STUDIO?
The Shanghai Studio makes up a part of Ubi Soft's large internal studio ring, which now produces some sterling work for its publisher. With *Prince of Persia* and *Beyond Good & Evil* under its belt, it's clear there's a decent pedigree of game design in there which might well grow and blossom in time. *Splinter Cell* is one of its most important games, so Ubi's bosses must have great faith in Shanghai Studio to do the right thing with the prestigious title. However, there has been some speculation that *Pandora Tomorrow* was rushed out. Could that really be the case?

WHAT IS IT DOING?
The China-based Shanghai Studio is one of the workhorses of Ubi Soft, and has worked to convert various games to different formats. It's done far more work on console titles than on PC, so it's hard to see it ever moving wholesale into developing a PC game. On the other hand, *Pandora Tomorrow* suggests that it'll increasingly be trusted with bigger projects, which might mean we'll see an original game from that crucible of code within a few years.

MUST SEE SCENE **Visually impressive and relatively unique in terms of how it plays out, the train level is possibly the highlight of the single player game. Watch out for the dog, though...**

DUE DATE Easter 2004

Once again stealth is everything – set off too many alarms and it's game over.

PRESS PASS?
Ubi Soft has wheeled out pictures of B-list actors Dennis Haysbert and Michael Ironside.

THEY SAY

FISHER "The tense realism, compelling storyline and attention to detail that you expect from Tom Clancy are evident in *Tom Clancy's Splinter Cell: Pandora Tomorrow*," says actor Dennis Haysbert, a longtime fan of Tom Clancy's work.

WE SAY

FISHY We'll probably never know what Tom Clancy's influence on this game really is, beyond the core concept itself, but it's safe to say that the game remains solid, if unremarkable, amid current trends.

↘THIRD-PERSON ACTION

SPLINTER CELL PANDORA TOMORROW

America's huskiest weapon is back, and showing Jim Rossignol his tactics.

Ever since God invented hide and seek, sneaking has been fun. In these modern times, sneaking has been elevated to a new level, and *Splinter Cell* has been one of the core advocates of modern digital sneakery. We were wowed by the lighting effects, wooed by the garrotting and entranced by the infrared goggles. Ubi Soft now attempts to reprise this popularity with a return to identical territory in *Pandora Tomorrow*.

But wait! Don't go, since there's much more here than just rehashed material. If we're honest, the single-player campaign of seven elaborate and often overly tricky missions might be very similar to the original game, albeit with new moves for Sam Fisher and some other tricks up the sleeves of level design. But there is now a multiplayer aspect to the game, too. This multiplayer game has clearly been designed with online Xbox demands in mind, but despite that it still translates to the PC pretty well. And having seen both versions, we can report that the PC game is far superior in both precision (thanks to mouse control) and visuals (thanks to crisp PC monitors and exorbitantly expensive graphics cards).

Spy vs spy

Multiplayer supports up to four players, who must choose between spy and guard roles. The spies infiltrate various deserted facilities, which the guards must patrol and protect. The spies hack and jack their way inside and attempt sabotage. The guards, meanwhile, employ flashlights, motion-detector vision modes, traps and the in-built security features of the facility to track and kill the spies.

The spies have some of the tools of Sam Fisher from the main game, but are generally weaker. They can only stun their opponents, for example, and must move in close for the kill to garrotte the guards. At the time of our playtest, the game seemed slightly unbalanced in favour of the guards, but this may simply have been the maps so far tried. We'll bring you a more in-depth consideration of this in our review next month.

Using guards (and train managers) as a human shield is a staple tactic.

Many people will, of course, buy *Pandora Tomorrow* for the hi-tech espionage feel of the single-player game, and it seems to once again carry a strong plot with interesting locations, despite the odd gripe. It'll be this multiplayer game that makes *Pandora Tomorrow* a truly interesting concept, though.

While there have been a few meagre efforts to make the single-player game more interesting, its flaws threaten to be more obvious than ever before. Frustrating set pieces and constrictive level design mean that *Pandora Tomorrow* often threatens to be frustratingly hard work. Those people who felt restricted and bullied by the tough dynamic of the original game will likely feel queasy here, too. Can the lovely train sequence redeem these woes? **PCF**

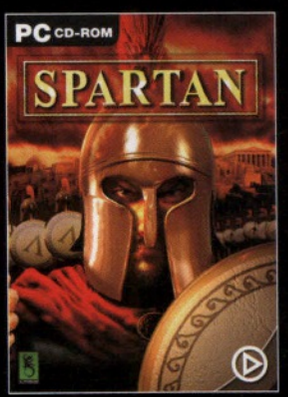
THE WAY YOU LOOK

Vision modes are of the essence.

Not since *Aliens versus Predator* have we seen a game in which vision modes are so important. Our infiltrator must use them in all kinds of situations, detecting mines, spotting hidden guards and invisible lasers, or simply seeing in the dark. More interesting still, there's a puzzle or two based on the vision modes of enemy characters. Not only that, but there's new, weirdo vision modes in the multiplayer, designed to catch the spies at their nefarious work.

EMPIRE STATE BUILDING

The Greeks built a civilisation that stood the test of time. The Spartans were at the forefront, taking the Art of War to a level never seen before, or since. Can you surpass their achievements?



PC CD ROM

SLITHERINE

JUST PLAY

www.justplaynow.com

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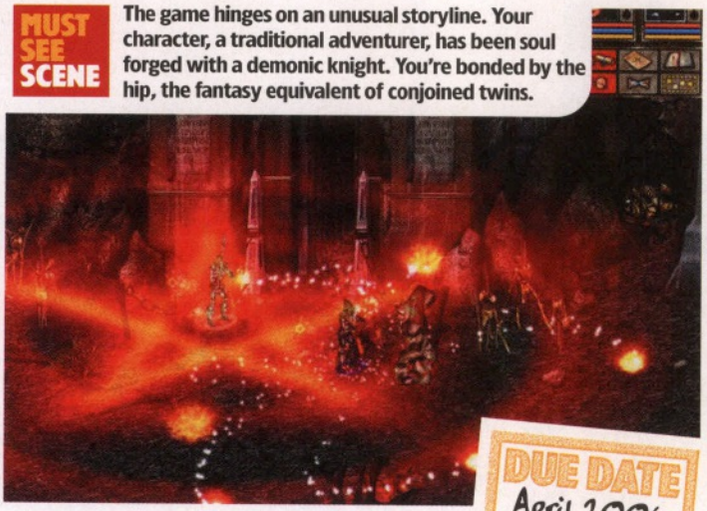
MUST SEE SCENE The game hinges on an unusual storyline. Your character, a traditional adventurer, has been soul forged with a demonic knight. You're bonded by the hip, the fantasy equivalent of conjoined twins.



DUE DATE April 2004

↘RPG

BEYOND DIVINITY

More divine than divine? This is a surprisingly twisted RPG, considering...

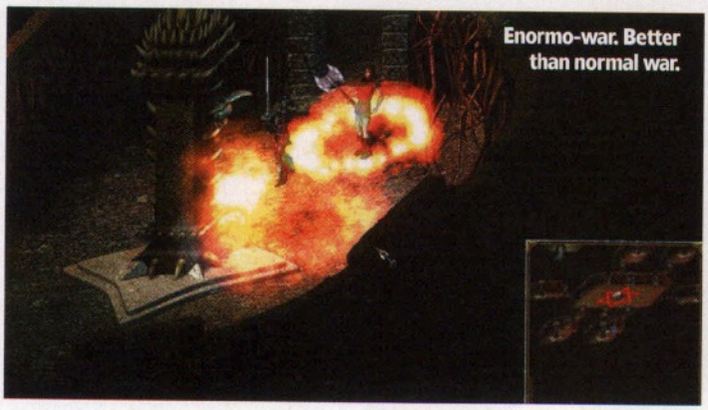
We don't know many folk who own a copy of *Divine Divinity*, the *Diablo*-style RPG from Larian Studios. But the quite astonishing US sales figures and numerous industry awards prove that the simple formula of bashing heads and a basic character development system is enough to intrigue. With such a success already under its +3 belt of inspiration, Larian is building a worthy sequel, developing the core ideas that proved such a draw. According to Swen Vincke, project lead on *Beyond Divinity*, "The most visible development is the updated graphics engine. The game will now feature real-time 3D characters and DX9 support, allowing full-blown magical effects." Cool.

This new technology is allowing for fundamental changes in how the game works. "We made full party member control possible," explains Swen. "You'll not just hack and slash your way through. We've also adjusted the balance of equipment drops, yet there will still be enough item fever, with stacks of different equipment and items to be found."

The big deal is the skill system. You can customise your avatar to an almost unprecedented degree. You choose the type of magic, followed by a series of modifiers, and you can tailor your attacks to the situation and character. Maybe you want to follow a whirlwind attack with a neat stab in the eye with your ice pick?

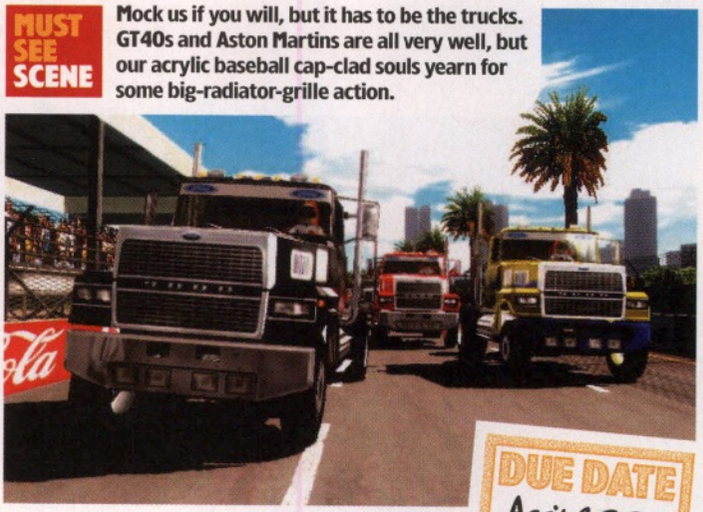
This is traditional RPG fodder. But Larian understands its audience's needs. *Beyond Divinity's* commercial success in its native Germany is almost assured, but critical success in the UK has eluded Larian. Will the new technology and tweaks impress? **Tim Edwards**

Beware the pentagram. It really is a devilish thing.



Enormo-war. Better than normal war.

MUST SEE SCENE Mock us if you will, but it has to be the trucks. GT40s and Aston Martins are all very well, but our acrylic baseball cap-clad souls yearn for some big-radiator-grille action.



DUE DATE April 2004

↘RACING SIM

TOCA RACE DRIVER 2

THE ULTIMATE RACING SIMULATOR

Inspection pit: see the latest Codemasters' behemoth.

We're sorry to start like this, but it has to be said: my god, it's full of cars. Codemasters' venerable franchise is bearing down upon us once more, and again it has snaffled the official licence for anything with four wheels and a number on the bonnet. The *TOCA* authorities have tired of the paperwork and handed Codies the licence in perpetuity, but it's joined by truck racing, rallying, classic hot rods and more – 15 vehicle styles in all, topped by the world's first appearance in dentable, digital form of the Aston Martin DB9, and 31 championships to test them on.

All part of the traditional and-the-kitchen-sink *TOCA* charm, then. "It's the diversity of the racing types that really sets *TOCA Race Driver 2* apart," enthuses Codemasters' Rich Eddy. "Finding grip on the loose dirt of a rally stage is poles apart from the total use of speed of drafting past the opposition in open wheel oval racing."

Rich further assures us that you'll be guided through all this by the same cinema-style narrative introduced in the original *Race Driver*, although this time it's minus young buck Ryan. He's been farmed out – running a Hyundai dealership in Bournemouth, no doubt – leaving you as the star of the show with all the FMV sequences in first person.

Everything from car models to road surface is gorgeously detailed.

And how does it feel to be in the driving seat? A blast around the track with some early code reveals that the renowned attention to detail is still in place, and it's feeling much more accessible with it, with even the novices managing a few leery powerslides on the first lap. The banger boys won't have such a happy time of it, though – an all-new and incredibly detailed graphics engine means that a bad shunt ends the race, and while surface damage seems as trivial as ever, you're treated to a symphony of unpleasant noises as the dents mount up. It's all looking good so far – the series hasn't missed a beat yet, and we're expecting great things from the finished version next month. **Jon Hicks**

Um. We meant to do that.

ARRESTING DEVELOPMENT

We point the finger at those games that are slipping like spinal discs.

SINGLES

PUBLISHER KOCH MEDIA

Otherwise known as 'that one like *the Sims*, but pornographic'. A hands-on tinker with early code reveals that *Singles*' Sim-ilarities (arf) border on plagiarism, thus guaranteeing a huge *Sims 2*-hungry audience. And it's explicit; there's no on-toilet blur like *Sims*, and the gleefully graphic nookie scenes are almost too embarrassing to watch (almost). Lordy, it'll be popular.

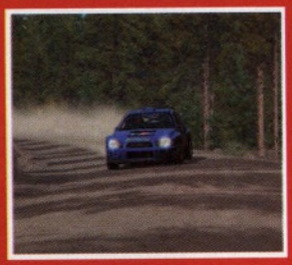
THEY SAY April

WE SAY Porn's not know for its lengthy development time

PROGRESS 80%

RICHARD BURNS RALLY

PUBLISHER SCI



With *Colin McRae 4.0* doing well for itself in this very issue (page 72), the heat is on for this pretender to the rally throne. We're expecting beta code next month, so verdict time on whether this is the champion it looks like from afar is drawing ever closer. It looks great, feels better, and it's about damn time someone shook up the rather staid racing game scene a little.

THEY SAY April

WE SAY Might wobble till May; we'll know next issue

PROGRESS 85%

EURO 2004

PUBLISHER EA

What, EA publishing a globally-dominating, officially-licensed football game on all formats – what're the chances? Yes, It's In The Game is at it again, but at least the *FIFA series* guarantees pedigree to this European cup tie-in. There's 51 nations to play as, and a new dynamic morale system: it's just what we need till *FIFA 2005*.

THEY SAY Summer

WE SAY Will coincide with the finals with quite uncanny precision

PROGRESS 60%

FREEDOM FORCE VS THE THIRD REICH

PUBLISHER TBA

Cast your mind back to late 2002, when we revealed our love for *Freedom Force*, a bonkers strategy/roleplaying title inspired by 1960s superheroes. A huge scheduling screw-up meant the game didn't reach the target audience, so we're enormously glad to hear a Nazi-bashing sequel is coming. It looks largely more of the same, but we're hoping for new features.

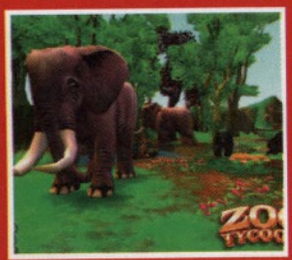
THEY SAY Spring

WE SAY It'll take Superman to stop a slippage now

PROGRESS 70%

ZOO TYCOON 2

PUBLISHER MICROSOFT



The original *Zoo Tycoon*, a cutesy 2D management title, didn't exactly light our fires significantly (except for when we got to leave koala bears in the lion pen), but a move to full-on 3D for the sequel looks promising. A certain sense of scale and awe has been introduced, and if nothing else we'll be able to look at monkey bums from any angle.

THEY SAY Christmas

WE SAY The kiddie market must be milked

PROGRESS 45%

>>MMORPG

WORLD OF WARCRAFT

We're presuming this has nothing to do with the well known and wonderful World of Sofas?

"Four years have passed since the aftermath of *WarCraft III: Reign of Chaos*, and a great tension now smoulders throughout the ravaged world of Azeroth." Good Lord, it must be a miserable job being a fantasy writer sometimes. Fortunately, we can see past this nonsense all the way through to one of the most promising MMORPGs yet, which also happens to be a spin-off from the massively popular RTS series, and beta tests for it are beginning any day now. And guess what – we've got a place in them. We'll bring you all the news next issue. Meantime, the promise of a constant stream of new adventures hopefully ensures it won't fall prey to the 'endless killing of small animals in the desert' syndrome of *EverQuest, Star Wars Galaxies* et al.

www.blizzard.com/wow/

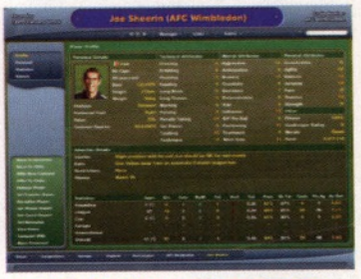
>>FIRST-PERSON SHOOTER

SHELLSHOCK: NAM '67

Mortal Kombat of the 60s. Most gruesome shooter ever?

If Vietnam is the new World War II, then the Gulf War must be the new Vietnam. In which case, Vietnam is the new Gulf War. Um. Anyway, this is the latest addition to a long list of 'Nam-inspired games, and from first impressions, seems to include the more harrowing elements of the war that *Vietcong* and *Battlefield Vietnam* (reviewed to relative acclaim this very issue) have largely neglected. Horrifically damaged corpses and extreme claustrophobia seem to be present in spades, but what we don't know yet is which side of jingoism it's likely to tread. What we do know is that it's graphically stunning, and is promising to portray some of the more psychological horrors of Vietnam as well as the visceral. *Silent Hill* on the Ho Chi Mihn trail, anyone?

www.shellshockgame.com



>>SPORTS MANAGEMENT

FOOTBALL MANAGER 05

A Sega-published new title in the back of the net.

Just because your parents split up, it doesn't mean either of them will stop loving you. Which must come as a relief to the thousands of *Championship Manager* fans terrified by the sudden acrimonious departure of esteemed UK developer Sports Interactive from publisher Eidos – leaving the latter with the franchise. But SI is back already with this familiar-sounding game, which looks set to very much build upon existing glories. No 3D engine yet, sadly, but there is a raft of improvements and new features implemented as a result of player feedback from the last *Champ Man* game. Of course, with Eidos still pumping out the *Championship Manager* series, can this new name win all the old fans away from what they know?

www.sigames.com

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SERVERS POWERED BY JOLT

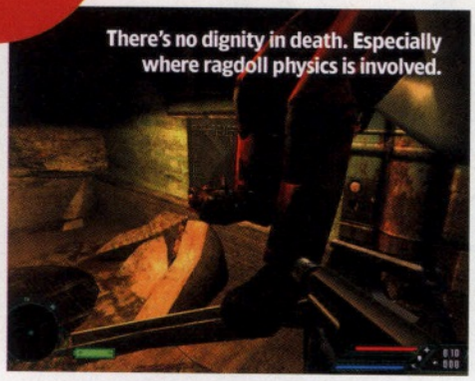
Gameplay Reviews

ACTION/STRATEGY/RPG

It's another day in paradise for Jack Carver...

'You still having problems with that stalker?' 'Nah, not for ages – I think he's given up.'

The driving models for vehicles compare favourably with *Halo*.



There's no dignity in death. Especially where ragdoll physics is involved.

Make too much noise on certain levels and expect these sort of chaps to turn up.

JUNGLIST MASSIVE

Get down 'n' dirty and fight.

With its luscious open areas, *Far Cry* multiplayer is clearly an attractive proposition. Three modes come as standard: a free for all; a team deathmatch; and an assault mode, which provides the basics. Since they're played across large areas, the easy player death makes it feel somewhat like *Battlefield* with a more verdant world and rather fewer vehicles, while the three character classes (fighter, engineer and sniper) make it operate a little like a stripped-down *Team Fortress*. The only loss from the main game is the extensive real physics, with barrels and scenery fixed to the ground. Feature most likely to be stolen by other games: the sniper rifle's glint giving away the sniper's position.

↘ FIRST-PERSON SHOOTER

FAR CRY

april 2004 gold PCFormat

If you were stuck on a desert island, what couldn't you live without? Kieron Gillen suggests an assault rifle, a machete and a copy of Kid Creole and the Coconuts Greatest Hits.

NEED TO KNOW

Price £34.99 **Publisher** Ubi Soft
Web www.farcry.ubi.com

Needs PIII 1GHz, 256Mb RAM, 64Mb 3D card

Wants P4 2-3GHz, 512-1,024Mb RAM, 128Mb 3D card

TIME TO COMPLETE 20 HOURS

REALITY CHECK You'd need $12.5m for a 363-acre island in the Bahamas that looks like the ones in *Far Cry*.

Travel journalism to imaginary destinations: it's an alternative definition of games journalism. We tell people what it's like to experience things that simply don't exist, and whether it's worth them taking the time and effort to experience them. *Far Cry* brings the line to mind, as rarely – ever, even – has the game felt like we are actually going on holiday to an exotic locale. The beaches are perfect. The flora rich. The views spectacular. The locals, er, somewhat less than friendly. It's a little like presenting a special *Wish You Were Here* program from a Colombian drug baron's private island.

And it really is beautiful. We apologise if too many of these screenshots don't have energetic figures doing their combat gymnastics in them, as you'd normally expect from a first-person shooter, but all too often we found ourselves climbing up a ridge to be presented with a panorama so pretty that we had to press the screenshot button to immortalise it. Simply put, this is the first genuine graphical jump of recent times.

Sure, *Deus Ex: Invisible War*'s pixel shaders were impressive, but its attributes were in no way as stunning as *Far Cry*'s visuals. Also, where *DX:IW*'s *Unreal*-hearted form was small, *Far Cry* is huge. Levels are grand vistas, actually constructed and utterly convincing, since it's clear that the distant peaks aren't a flat texture but a real locale that you can visit if you can be bothered to hike your Hawaiian shirted-form over there. While *Project IGI* managed similar sizes, in terms of attractiveness and density of terrain, *Far Cry* is something entirely new.

Bowled over

Once you get over the initial shock of the visual allure – which, to be honest, we never did – you swiftly realise that where this technical achievement is important is in how it impacts on the game. Yes, the levels are massive, but this means that the player can approach a situation in dozens of ways. The easy choice for a developer would be to hem the players in, and lead them from one strictly defined arena to another, like *Halo* does, but Crytek refuses to deal with that. While it clearly encourages a path through the area, and includes waypoints to make sure you don't get lost, there is little to stop you finding your own way.

Such freedom places incredible demands on the game's AI. Consider the *Delta Force* games which have a similar sprawl, and how their characters react to being sniped at – that is, running around like soon-to-be headless chickens. Alternatively, think of the worst excesses of *Medal of Honour*, where a single sniper shot will immediately alert the opposition to your exact position, and cause an uncannily perfect shot to home in on you.

Far Cry doesn't do that. Being shot at causes everyone to duck and look around in a credible panic. And then they'll react with a mixture of humanity and sense, crouching, looking around for a few moments to see if there's any easy sign of who shot them. And then, most likely, they'll run and try to find some form of cover, and start to search for this elusive sniper, with commanders calling out orders to their subordinates and people looking for reinforcements, which promptly arrive by helicopter. Most of the time, anyway.

Closer up, one of the best integrated stealth mechanics in a first-person shooter comes into play. While verbal cues from the

LOOKING ELSEWHERE

ACTION WITH A STEALTHY AFTERTASTE.

>>PCF145 **SPLINTER CELL** 84%
>>PCF157 **PROJECT IGI** 72%
>>PCF158 **OPERATION FLASHPOINT** 84%

Pigs don't stand a chance round here.

Tactics include attacking and running away.

Polybump technology allows characters to be polybumped. See also: Attractive.

MOD OPTIONS

Far Cry's mod potential is simply huge. With *Half-Life 2* still a while away, there's room for a hungry scene to spring up around the CryEngine Sandbox editor. Where it's interesting is that while powerful, it also seems highly accessible. For example, external environments can be randomly generated and then tweaked, abstractly allowing even beginners to create functional levels. For a closer look at the tools, wander over to the Gamemaker section of *PCF* next month and all will be revealed.

farcryhq.com – **Far Cry HQ, the biggest unofficial *Far Cry* website**
www.xfarcry.com – **Extreme Far Cry, presumably**

YOUR FIRST HOUR **YOU'LL LOVE** ↗ The graphics ↗ The freedom ↗ The shirt **YOU'LL HATE** ↙ The initial difficulty ↙ The voice acting ↙ Wanting to buy a new 3D card

STICKING POINT

Pains, training levels and stealing automobiles.

BEAT IT!

TIMECODE Ten minutes, three seconds. Probably.

CHALLENGE You've escaped from your initial problems, located some ammunition, killed a few pigs for giggles and got a pair of binoculars. Looking ahead, there's a busy camp full of people with men in watchtowers. You have to steal a jeep from there. There's an awful lot of them. What a predicament.

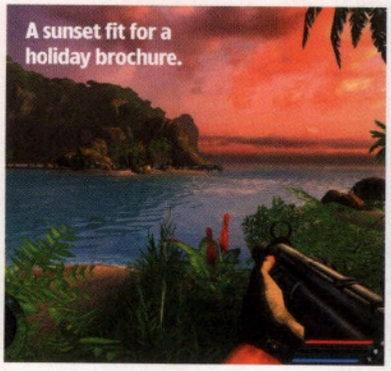
SOLUTION Well, guns blazing is always an option, but this is the first real introduction to the oblique approach to a situation. Bear left, swim underwater and go on the beach on the far side. Crouching, make your way around the right of the camp in the undergrowth, following the lay of the land. Follow waypoint and you'll find you've completely bypassed the opposition's defences. Knife the one guard and make like you're playing *Grand Theft Auto*.

DON'T MISS THIS!

Because sometimes to admire the view you need more than a cliff top.

WHAT IT IS Vehicles have already made their appearance, proving useful to get around the terrain. But there are no flying machines – until you find yourself on a mountain top with an approaching patrol inching closer and a glider. Run up, select it and you're off, free to soar like Icarus. Of course, there are attack-choppers around.

WHERE TO FIND IT Escape from the first enemy base and you'll find it at the opening of the level. Beautifully, however, you don't have to use it. Hiking is perfectly fine.

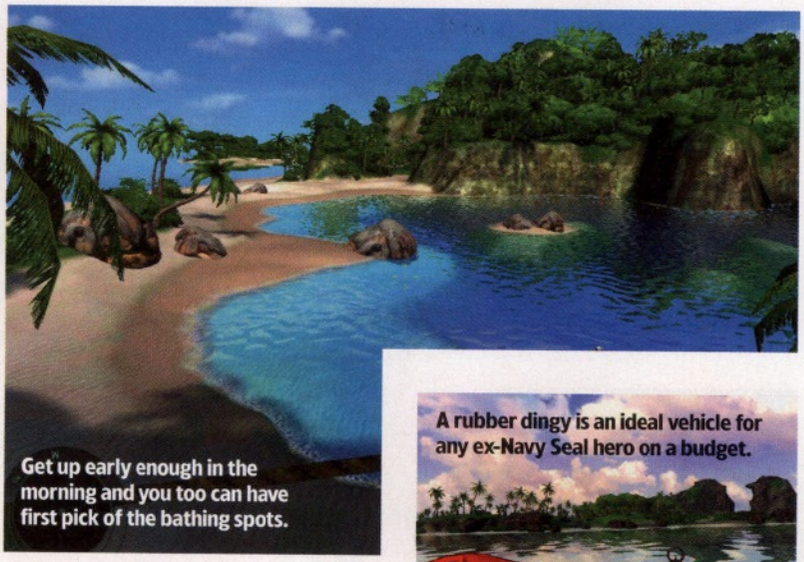


A sunset fit for a holiday brochure.

soldiers give much information, an alert bar shows how aware the opposition are of your position, enabling you to swiftly alter it or utilise the terrain. Hiding in the foliage works – if you can't see them, they can't see you, allowing stealthy outflanking manoeuvres around an opposition line. They don't just take from visual cues, either: sound is important, too, and you can throw rocks to distract them. In short, the stealth and search AI has more akin to *Thief* in terms of consistency than most of its peers, but where that genre's classic natural colour is urban black, this is jungle green.

Realism rules

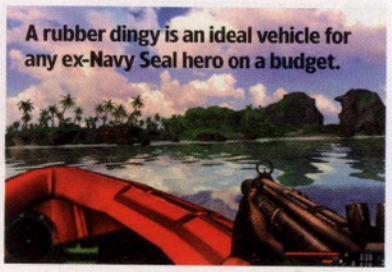
When *Far Cry* makes an error, which is admirably infrequently, with only a few erratic AI moments being noticeable, you should remember exactly all the things it's doing right which other games simply don't. Next time you're examining a base through binoculars, for example, take a closer look at the opposition's activities. Soldiers aren't just patrolling – many are resting, smoking cigarettes, chatting (with conversation audible through pick-up mikes in your binoculars for distant listening) and even fishing. Now fire a few shots. The peaceful world is immediately shattered as they all prepare for trouble and don't, as we've come to expect in videogames, ever return to their casual reverie. They're not relaxing when they know something's out there. An extreme example of this is when you realise that a mutant has followed you half way across the island to get you.



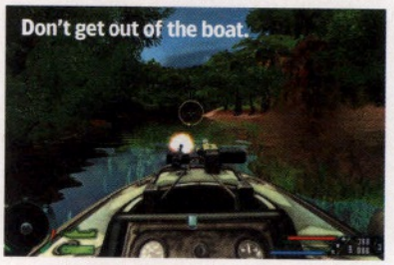
Get up early enough in the morning and you too can have first pick of the bathing spots.

Oh yes, the mutants. While this isn't where *Far Cry* goes wrong, it is where it stops going capital-r Right. In what initially appears to be straight action turns into a science-fiction thriller involving a mutagen causing people to alter and oh, we're sorry, we really can't be bothered to write out the rest. It's a rubbish plot we've seen dozens of times before, and its inclusion here is a mystery that can only be assigned to *Far Cry*'s clear desire to be The Best First Person Shooter Ever. Obviously, they think this must involve mutants, indoor levels structured around horror, scripted surprises and all the assorted conventions of the genre worn thin through overuse.

When *Far Cry* does what only it can do, it's a genuine classic (you'll be waiting in vain to see anything of the scale of the outdoors sections in *Doom III*). When it follows in others' footsteps, it's merely a highly superior genre game. Ironically, by trying too hard to be The Best First Person Shooter Ever, it prevents itself claiming the crown. But when it has the courage of its convictions, this is simply as good as action games get. **PCF**



A rubber dingy is an ideal vehicle for any ex-Navy Seal hero on a budget.



Don't get out of the boat.

PCFormatVerdict

Technically stunning on pretty much every level

Interior levels are often a little more predictable

MOD OPTIONS Extensive editor: see Gamemaker next month

NET GAMING OPTIONS Multiplay: 1-32

"When it's itself it's superb. When it's derivative it's merely great." **90%**

MILITANT BOB THE BUILDER

Engineers are important support staff in the multiplayer game

01 PLAN... Firstly, locate these areas with blueprints that mark out strategically important locations where you may construct useful, er, constructions.

02 BUILD... Get out your wrench and in a few seconds a suitably imposing edifice will block the space. Different blueprints will lead to different structures, like bunkers.

03 DESTROY Of course, the attackers will want to get rid of them as swiftly as possible, so their engineers can plant charges to remove the pitiful walls. Onwards.

THE HIGH RANGE,

THE MID RANGE,

...THE BEST RANGE.

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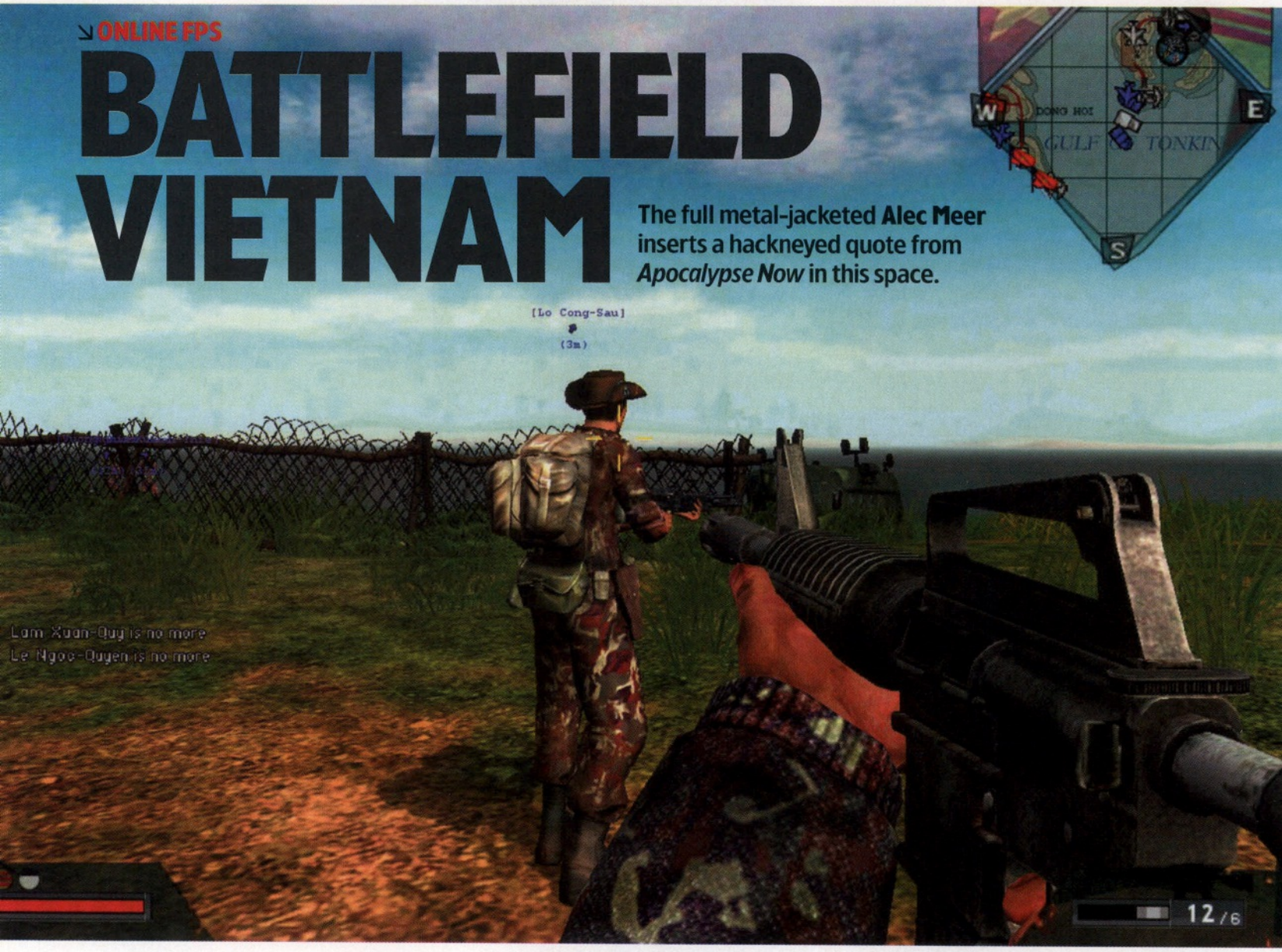
BATTLEFIELD VIETNAM

The full metal-jacketed Alec Meer inserts a hackneyed quote from *Apocalypse Now* in this space.



april 2004 silver PCFormat

Late on Thursday evenings, in smoky snugs across the length and breadth of the country, games journalists past and present huddle over cheap lager and roll-up cigarettes. Most of them wear leather jackets and knackered jeans; all of them have short-cropped hair that requires no effort in the morning. Their talk chiefly involves swapping bitter tales of industry corruption, glory days and, most especially, bad writing. Among these broken folk, whose trade was once referred to as 'the new music journalism' but became nothing of the sort, there are Rules.

These Rules speak of what can and can't be written, and most of all, what has already been written too many times before. It's with constant anguish that we struggle to adhere to the Rules, but occasionally, very occasionally, we inadvertently break them. A case in point: we dread to think how many back issues of *PCFormat* might contain a review of a military-based game beginning with the phrase "War – huh! What is it good for?" Everyone on the *PCF* team has done it at least once, and they've been ridiculed for it each time. But now what do we do? When the game being reviewed includes as part of its fantastic soundtrack the song in question (Edwin Starr's *War*), how can we possibly escape our destiny of Generic Game Review Introductions? And how long before we also make some pun about the smell of napalm in the morning? More importantly, war – what is it good for?

SOUNDTRACK OF OUR LIVES

Bored with endless Kinks and Troggs songs? Then let *BFV* play your music instead.

Bombing around the Ho Chi Minh trail on a Vespa scooter, blaring out *Come On Eileen* through a hail of gunfire and a sea of napalm behind us, has to be one of the odder gaming moments we've experienced. But one of our favourite aspects of the game has to be choosing the most hilariously inappropriate music to listen to as we re-enact one of the most controversial wars of all time. Sadly, licensing issues mean that, unlike *BFV*'s official soundtrack, your own playlists won't be streamed to anyone else in listening range on the server. But knowing that, even as you're shooting a man in the face, you can hear the theme tune to *Wizbit* playing is entertaining enough in itself.

Bring on the chorus line

It's this aforementioned soundtrack that really makes *Battlefield Vietnam*. Sure, plenty of games have won awards for their soundtracks, but no one has yet capitalised on the genuine revolution that *Grand Theft Auto: Vice City* brought about with its licensed music. Until now. In so many ways, *BFV* could be simply a mod for its prequel, the online multiplayer

Familiar to millions – the spawn point system is identical to *Battlefield 1942*.

NEED TO KNOW

Price £30 **Publisher** EA
Web www.eagames.com/official/battlefield/Vietnam
Needs 933MHz CPU, 256Mb, 64Mb DirectX 8.1 3D card
Wants 1.2GHz CPU, 512Mb, 128Mb 3D card

TIME TO COMPLETE
N/A

REALITY CHECK
Everyone on *PCF* hates writing the reality check, hence it will cease to be from next issue.

LOOKING ELSEWHERE

>>PCF142 **UT 2003** 92%
>>PCF147 **VIET CONG** 87%
>>PCF160 **FAR CRY** 90%

Pictured shortly before we managed to blow up the plane without even leaving the runway.

DON'T MISS THIS!

You'll believe those American tanks can fly...

WHAT IT IS Charlie don't surf, but he nevertheless needs some way to cross the numerous expanses of water in *Battlefield Vietnam*. In which case, he must stare enviously at the US forces chopper-lifting their ground vehicles across the sea with their gigantic helicopters. It's an astonishing, unique sight.

WHERE TO FIND IT OK, confession time – we're just too rubbish at helicopter piloting to have managed to pull this off yet. But theoretically, you just need to hover your Huey or Chinook a few dozen feet above a tank or jeep, hit the right mouse button to drop a chain, and you're away. Just try not to get shot down in the middle of island-hopping, as whoever's in the tank will snuff it, too.

shooter *Battlefield1942*, but for being able to climb into a tank, a huey or even a Vespa and start playing Jefferson Airplane's *Somebody To Love*, Creedence Clearwater Revival's *Fortunate Son* or even, brilliantly, Wagner's *Ride of the Valkyries*. Marlon Brando would be proud, if he a) cared even slightly and b) wasn't too staggeringly obese to so much as sit at a PC in the first place.

And then you get shot before you reach the first chorus, inevitably. Seeing as *Battlefield Vietnam* isn't a *Grand Theft Auto* game, despite the clear inspiration, you can't just roam around the jungle singing your heart out – you're here to fight, as are the anything-up-to-31 other players on the server. And a surprisingly hardcore fight it is, too. The *BF1942* dynamic of men versus tanks versus planes versus men is intact, but death is far easier to come by this time around, whether it's from a near-invisible Viet Cong sniper in the undergrowth, a napalm bomb dropped catastrophically on to your spawn point from above or, even more commonly, your own cack-handed piloting of your helicopter into the sea because you're too busy air-drumming along to *Wild Thing*.

Death becomes him

With each death, the wait to get back into the game is even more drawn-out and torturous, partly genuinely and partly because this is a game that makes you sorely, desperately, urgently desire revenge on whichever camping bastard just took your head off with a single shot, after you'd spent 10 minutes crawling painfully and oh-so-slowly through the mud on your belly, trying to capture that last enemy spawn point unnoticed.

This is a game very much about terrain. In contrast to the wide, open plains of *1942*, largely populated by short-range and dirty head-to-head warfare, *Vietnam* feels very much like carving your own path through dense, confusing alien territory, with the relief of camouflaging cover almost always only a step away. You don't even need a sniper rifle to snipe – so long as you're lying down, you're

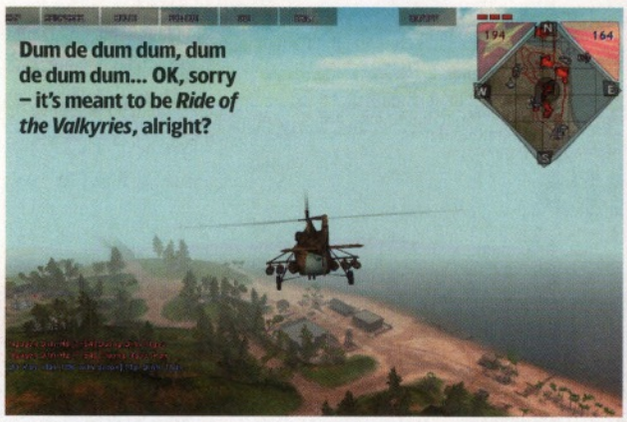
PLAY IT AGAIN

BFV's soundtrack rocks – shame about the clumsy playback system.

As we've mentioned elsewhere, what really elevates *Battlefield Vietnam* above its predecessor is its music – if you're listening to the licensed, 60s rock supplied, the game will stream it across the server, so a solitary VC cowering in a tunnel entrance really can be unnerved by the gradually mounting strains of *Ride of the Valkyries* from a huey somewhere above. Sadly, some bad implementation means that leaving your vehicle – whether deliberately or through being shot – always resets the music.

Much as we love a bit of Jefferson Airplane, hearing the opening bars of *Somebody To Love* repeated again and again and never reaching the infectious chorus, purely because the game is incapable or remembering where you left off the last time you played the track, is deeply irksome.

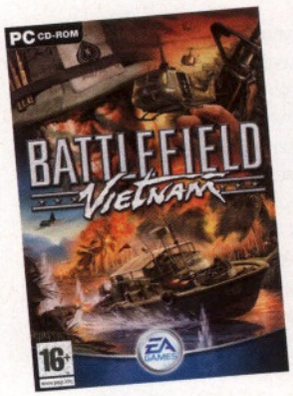
YOUR FIRST HOUR **YOU'LL LOVE** ↗ White rabbit ↗ Laying mines ↗ Dropping napalm **YOU'LL HATE** ↙ It's World War II with jungles ↙ Often ugly graphics ↙ Campers


Dum de dum dum, dum de dum dum... OK, sorry – it's meant to be *Ride of the Valkyries*, alright?

War. Only war. War war war warritty war. War.

If we screw up this take-off, we'll not only kill ourselves, but five other men. Man – power rocks.

One man and his tank went to napalm a jungle, oh, two men and a tank went to napalm a jungle, three men...



invisible until you start firing. Given that a large number of the ground vehicles leave their drivers exposed, a lone footsoldier with a pistol can feasibly stop a tank single-handedly, so long as he's a good enough shot. This is strongly accentuated by the palpable differences between the US and NVA forces. The ever-ostentatious US troops have heavier weapons and more vehicles, but the local forces have better camouflage and more snipe-friendly guns to pick people off from a safe location.

This is very much a game designed for evil and unfair players, which bodes rather well for the office swear jar. Fortunately, there's always the air support – nothing like a few air-to-ground high-explosives to flush campers out of the jungle. We love the smell of nap... no, stop it. Luckily for those on foot, wheel or tracks, the planes and helicopters are even more challenging to fly than the legendarily tricky air vehicles of *1942*, so being able to stay in the sky long enough to reach an enemy, let alone aim a machine gun at him from several hundred feet up, is a rare and glorious accomplishment. When it is mastered, it's a genuinely fabulous feeling, but it's a world away from the hop-in-and-fly experiences of *Halo* and *Unreal Tournament 2004*. This will inevitably be massively offputting to new players presented with the unwieldy controls and the prospect of dozens of murderous veterans on the servers.

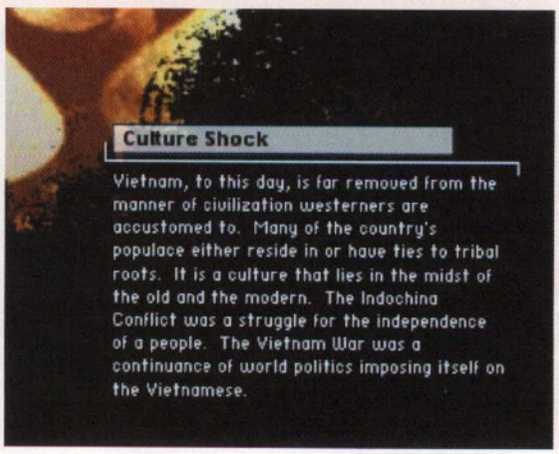
Same same but different

An enormously rewarding and complicated game *Battlefield Vietnam* is then, and unquestionably an improvement upon its predecessor. At the same time, it's so remarkably similar to *BF1942* it's almost not worth buying if you're an existing fan. But if you're not, this is where you find out just why *BF1942* has become one of the premier choices for online gaming – it's diverse and enormously tactical, with a huge emphasis on playing as a team. Whether its eerily similar new brother can genuinely supersede its popularity is something we wouldn't like to bet on just yet – but if nothing else, at least it's not another game set during World War II. **PCF**

POLITICALLY SENSITIVE

Not another jingoistic game about shooting gooks in funny hats, surely?

For the record, we're enormously concerned about the trend towards Vietnam games at the moment – any war isn't exactly a laughing matter, but on top of that, most 'Nam titles have tended to err on the pro-US side and take a very blinkered outlook on the whys and wherefores of the Vietnam conflict. While *BFV*'s game element is very much the nuts and bolts of combat and nothing else, at least you do have the option of playing as either side, and, brilliantly, the loading screens document the history of the clash. We really wouldn't have expected a game from a big US firm like EA to mention phrases such as, "The Vietnam war was a continuance of world politics imposing itself on the Vietnamese." It doesn't excuse making a game about tragic events, but hey, at least it's making some effort.



Culture Shock

Vietnam, to this day, is far removed from the manner of civilization westerners are accustomed to. Many of the country's populace either reside in or have ties to tribal roots. It is a culture that lies in the midst of the old and the modern. The Indochina Conflict was a struggle for the independence of a people. The Vietnam War was a continuance of world politics imposing itself on the Vietnamese.

PCFormat Verdict

It's *Battlefield 1942*, but in Vietnam

It's *Battlefield 1942*, but in Vietnam

MOD OPTIONS
Tons – *BFV* actively encourages it

NET GAMING OPTIONS
Up to 32 players on LAN or internet

"The Vietnam war scrubs up remarkably well as an online FPS."

84%

PC CD

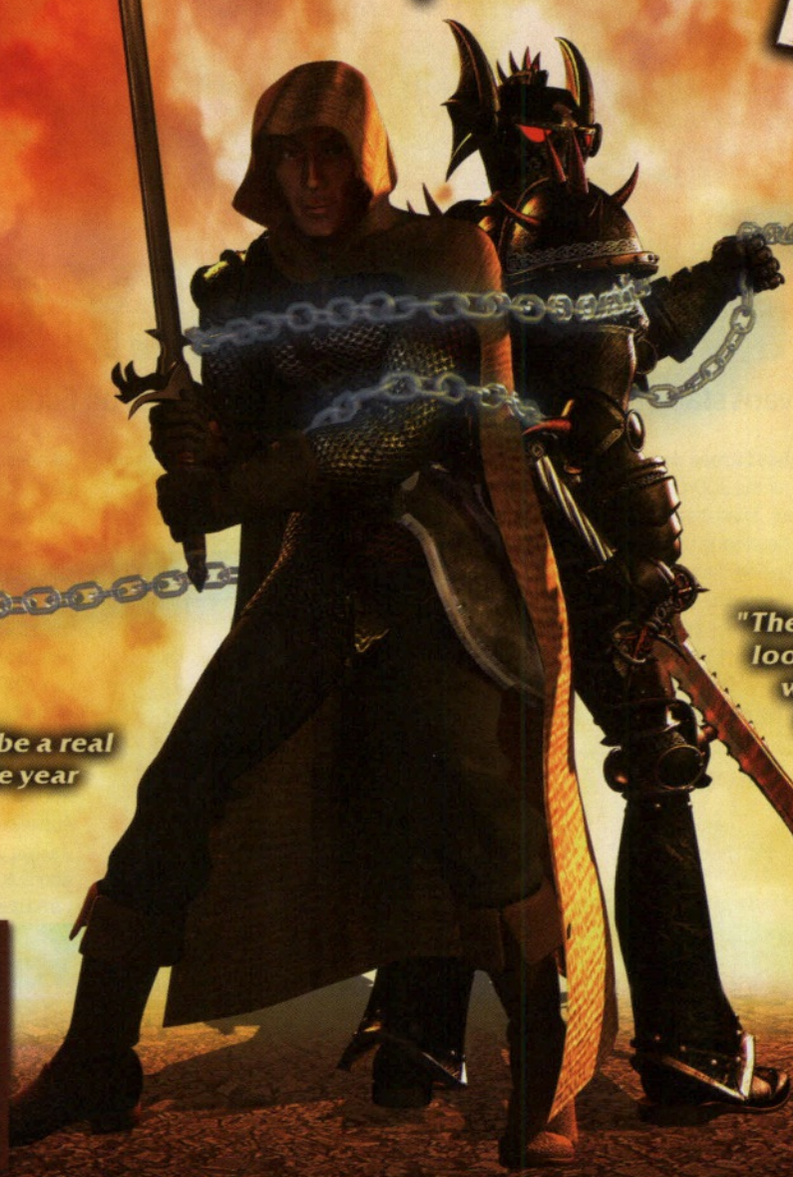
"...combines the best of fast-paced combat-oriented RPGs with a decent storyline and inventive questing." - IGN

12+ www.pegi.info

BEYOND DIVINITY™

THE QUEST CONTINUES

INCLUDES PREQUEL NOVEL WRITTEN BY RHIANNA PRATCHETT



"Beyond Divinity could be a real contender for RPG of the year in 2004" - PC Gamer USA

"The developers at Larian certainly look like they're prepared to take what they started with in Divine Divinity and are ready to bring it up a notch." - GameSpot.com

The most acclaimed RPG of 2002 has spawned a sequel. Beyond Divinity is the widely anticipated follow up to Divine Divinity. In this latest and most immersive tale, you are soul-forged with a Death Knight, your fate is to spend the rest of eternity bonded to this creature of evil, unless you can undo this curse. Prepare for your greatest adventure as you set off on the quest to unlock the secret of riftrunning... your only hope!

WWW.BEYOND-DIVINITY.COM

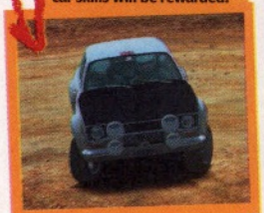
Digital Jesters

LARIAN studios

Published in the UK by Digital Jesters Ltd. Developed by Larian Studios. Copyright 2004 Digital Jesters Ltd.

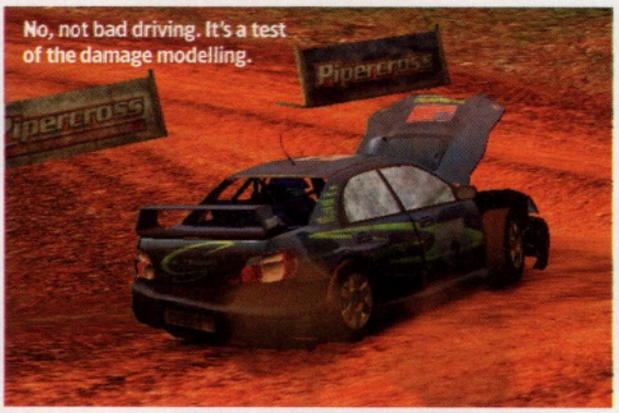
DON'T MISS THIS!

Perseverance is key: your car skills will be rewarded.



WHAT IT IS A Ford Escort RS 1600. And it's sliding around a corner. Just about to hit a rocky wall. It's a 70s classic, with a 1600cc BDA 16-valve engine. Hannu Mikkola won the Daily Mirror World Cup Rally in an RS 1600, and by 1975 the car had won races in Africa, Finland and NZ. But not this car...

WHERE TO FIND IT Get past the fourth stage in the 4WD Championship and you'll unlock an undamaged RS 1600. Finish Group B and you'll win the Audi Quattro.



DRIVING SIMULATION

COLIN McRAE RALLY 04

ON THE DISC

It's confusing when Dean Evans starts shouting 'I'm Colin McRae'. He's more of an Eddie the Eagle.

LOOKING ELSEWHERE

>>PCF147 **TOCA RACE DRIVER** 87%
>>PCF150 **COLIN MCRAE RALLY 3** 83%
>>PCF157 **V-RALLY 3** 52%

Forget that Citroën dumped Colin McRae for the 2004 season. Not important; it hasn't stopped Codemasters developing the next episode in the *Colin McRae Rally* franchise. Basing a game on a fading star could be a risk – you wouldn't hold out much hope for a game called *Leeds United Club Manager*. It's a big name, just not a very successful one. Ditto McRae, but Codemasters might argue Colin McRae isn't just a rally driver any more: he's become a global brand. It's why *CMR4* is less about the man, and more about the sport.

Like the *FIFA* series, each *CMR* feels like an update rather than a new experience. Nothing initially impresses as you kick off the core Championship Mode – not the tightly twisting UK stages as they snake across muddy farmland, nor the tricky Swedish rally that tests your skills on compacted snow and ice. If you've played *CMR3*, you'll have been there and skidded around it before. You'll have come to expect the tiny details, too – the excellent landscape modelling, and the way a car door buckles as you clip an indestructible tree.

Ironically, *CMR4* is a better game because it doesn't force you to be Colin McRae. Instead, you're you. You choose your car based on one of six Championships. Get behind the wheel of McRae's old Ford Focus in the 4WD competition or test your skills in a Group B death-trap motor like the Lancia 037. These cars were banned in the 1980s due to a poor safety record; once you've cornered one in a rally stage, you'll see why. But not all the 20 or so cars are available from the start. *CMR4* makes you play through the Championships, rewarding you with extra cars as you progress.

CMR4 has by far the best handling of any of the *Colin McRae* games so far. 2WD, Group B and bonus classic cars all require a different driving approach. It's a game at its most fun when you're sliding across pea gravel in the Aussie outback, and at its most intense when you find yourself blundering through the Welsh woods at 80mph. Poor Colin McRae. The game has become bigger than the name. **PCF**

NEED TO KNOW

Price £34.99 **Publisher** Codemasters
Web www.codemasters.com

Needs 1GHz CPU, 256Mb, GeForce 4 or better

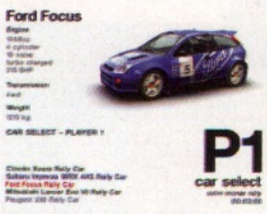
Wants 3GHz CPU, 512Mb Radeon 9800, SoundBlaster Audigy 2ZS

TIME TO COMPLETE 30+ HOURS

REALITY CHECK An invisible force will never magically pick your car up from a crash and return it to the road.

BYE, BYE McRAE

The game is better without him.



01 CAR SHOWROOM Where *CMR3* limited you to McRae's Ford Focus, *CMR4* gives you a wider choice of cars. But we've chosen the Ford Focus again for some reason.

02 GHOSTLY GOINGS-ON The addition of a ghostly red pace car enables you to see how much faster you need to hurtle if you want to beat the record for a stage.

PCFormatVerdict

↗ The most realistic *Colin McRae* game yet
↙ Less fun in the pursuit of the off-road realism

MOD OPTIONS User-made textures, skins and stats
NET GAMING OPTIONS 1 to 8-player LAN play

"Slick, with better handling but seen-it-all-before gameplay." **84%**

YOUR FIRST HOUR YOU'LL LOVE ↗ Superbly landscaped stages ↗ Realistic damage modelling YOU'LL HATE ↙ Trees that seem made of steel ↙ Suck-the-fun-out-of-it presentation

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Embrace the dark

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- PC Gamer

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www.splintercell.com

UBISOFT™

STICKING POINT

You gotta go visit the blacksmith, that's all.

TIMECODE Early second mission, 30 minutes.

CHALLENGE You are required to visit both the blacksmith and the shop but whatever you do, visit them in the correct order. If you don't abide by this, for example by visiting the shop first, you miss out on a sweet suit of armour for sale at the blacksmiths that won't be available for another four missions (about 10 game hours).

SOLUTION Simple. Before you go to find the Bastard of Orleans, visit the blacksmith when mission two starts, purchasing the suit of armour (3,000 gold) from the outset. Fill the North Sea with a deadly poison, and then proceed to set the Earth on fire.

Toe-to-toe combat can get frantic, to say the least.

DON'T MISS THIS!

Trojan horse of, er, France.

WHAT IT IS You have the ability to ride and fight on horseback. But, everything from the camera to the control system seems pitted against you. There is great joy in riding along a castle's battlements, but not when you get stuck. In nothing. Like this.

WHERE TO FIND IT Any castle. Grab a horse; ride upstairs and along the narrow battlements. Watch horse get stuck in mid-air/vacant space.

↘ RPG/STRATEGY

JOAN OF ARC

Donning her helmet and broadsword, Eve Power journeys back to 15th century France.

NEED TO KNOW

Price £29.99 **Publisher** Enlight Software
Web www.joa-game.com

Needs 800MHz CPU, 256Mb, 32Mb 3D card

Wants 1.5GHz CPU, 256Mb, 64Mb 3D card

TIME TO COMPLETE 20 HOURS

REALITY CHECK Joan of Arc was so devout that she forbade her troops to swear. Not your usual army, then.

Welcome to medieval Europe, where hearing voices, commanding armies, and being burned at the stake before emerging as Patron Saint of France, doth a game heroine make. The Hundred Years War provides a backdrop for this unconventional cross-genre title in which you take control of Joan of Arc and her troops as they battle the conquering forces of England. You fight across eight massive maps in this mission-based game, which attempts to combine RTS, RPG and third-person action.

Beginning at Orleans and panning across the Loire Valley, the scale of it all and the innovative genre fusion is compelling. RPG elements such as ability scores, hit points and character stats occupy the bulk of the menus, but the real beauty of *Joan of Arc* is the seamless switching between RTS and third-person action.

Picture fighting nose to nose with an English general, zooming out to an RTS view of the map, directing your troops' movements on a much grander scale, then zooming back in to continue your hack 'n' slash. A combo system delivers attacks, using left and right clicks. Don't neglect your overall strategy, though, as button bashing will soon be the death of you and your troops.

While graphically sound, this game lacks the startling eye candy we now expect of RPG/RTS titles today. Highlights on water, armour and so forth are noticeably absent. It also suffers a lack of interactivity, especially in towns, which are really a maze of useless buildings except for the ubiquitous blacksmith and shop. However, the greatest flaw with *Joan of Arc* is the camera. Granted, it works well in open meadows and fields, but just try fighting in an enclosed space (we're talking city streets and battlements).

More often than not, the camera jerks around of its own accord, settling at appalling angles. Solid objects like walls don't become quite transparent enough, thus blocking the action and often causing casualties. As for riding a horse, it's a case of a great idea killed by epileptic collision detection. Surprisingly for a modern strategy, *Joan of Arc* has no multiplayer capabilities.

Violent femme

Despite its flaws, *Joan of Arc* has an unmistakeable pick-up-and-play factor, coupled with a learning curve that makes it very enjoyable, especially acquiring many rare items from the slew of side quests. Fighting as the greatest female warrior in history [*What about Boadicea? – Ed*] is rewarding enough to almost outweigh that awful camera. **PCF**

LOOKING ELSEWHERE

FIND SIMILAR ACTION IN

>>PCF 140 **MEDIEVAL: TOTAL WAR** 93%

>>PCF 157 **STAR WARS: KNIGHTS OF THE OLD REPUBLIC** 92%

>>PCF 156 **LORD OF THE RINGS: THE RETURN OF THE KING** 43%

Combos are frantic mouse-button clicking.

You gather many troops and fellow heroes along the way to aid your quest.

YOUR FIRST HOUR **YOU'LL LOVE** ↗ Pick up and play ↗ Stirring music **YOU'LL HATE** ↙ Awful French accents ↙ Mind of its own camera

PCFormat Verdict

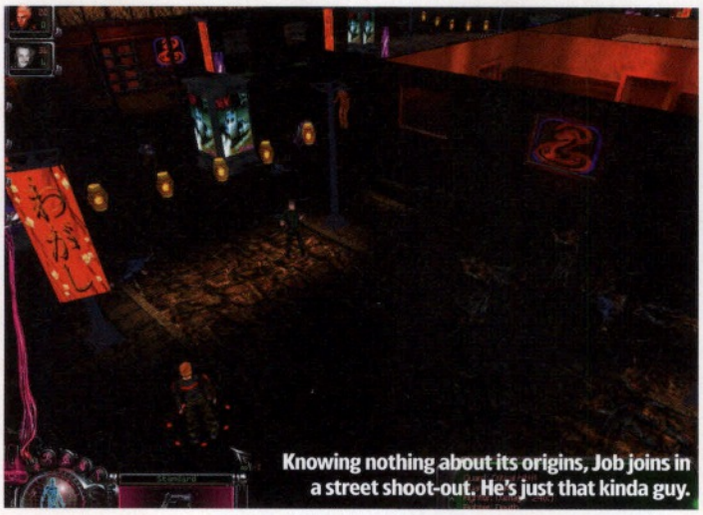
↗ Frantic action and authentic figures boost enjoyment.

↙ Tons of useless buildings. Oh, and that camera.

MOD OPTIONS None

NET GAMING OPTIONS None

"A hybrid of genres excellently blended, although not faultless." **73%**



Knowing nothing about its origins, Job joins in a street shoot-out. He's just that kinda guy.

↘ TURN-BASED STRATEGY

PARADISE CRACKED

Milton: the strategy game? Er, no, sadly not.

NEED TO KNOW

Price £30 **Publisher** BUKA
Web www.buka.com

Needs 400MHz CPU, 128Mb, 8Mb 3D card

Wants 800MHz CPU, 32Mb 3D card

Hacker waits to cross the road. "Biorhythm!" he exclaims. Hacker lurches forward 10 paces and stands on the tramline. The monitor switches to a loading screen. The computer moves an innocuous, advertisement-holding robot. Hacker continues his odyssey across the road. This is the rivetting beginning of *Paradise Cracked*, a turn-based trip through a dystopian world, which sees Hacker and co stumble between mixed objectives, in a venture that, eventually, becomes a familiar fascist-supercomputer-taking-over-the-world storyline.

Despite being a wanted felon, Hacker is offered multiple missions by strangers he encounters. Their dialogue is clunky and, in places, bizarre: "Life is motion," "War is war" and the now-immortal (but still unexplained) office catchphrase "Biorhythm".

To their credit, the developers have created a gloriously neon, cyber-punk strategy world, with easy camera operation and well orchestrated music. Successful ventures such as unlocking doors and defeating enemies accrue points that can be used to embellish character attributes. But inevitably, it's *Paradise Cracked's* action that collapses it like a rather bad soufflé.

During combat, the turn-based style of play allows for tactical deployment of characters and weaponry. However, its constant presence means that merely walking one block becomes a five-minute task as the enemy takes at least 30 seconds to consider its next move: you may need a good book.

Despite lengthy computer turns, the AI is a disappointment. Blasting one guard twice barely causes his companion to blink, and your friends have no qualms in taking you out if you're in the line of fire.

The large scenarios and some well-executed combat moments don't overcome the general confusion. *Paradise Cracked* has not taken the opportunity to develop the solid strategy foundations laid down by the likes of x-com and the rest. **JJ Smith**

A pile of bodies in one corner, a prostitute in the other. Just another *PCF* edit meeting.

PCFormatVerdict

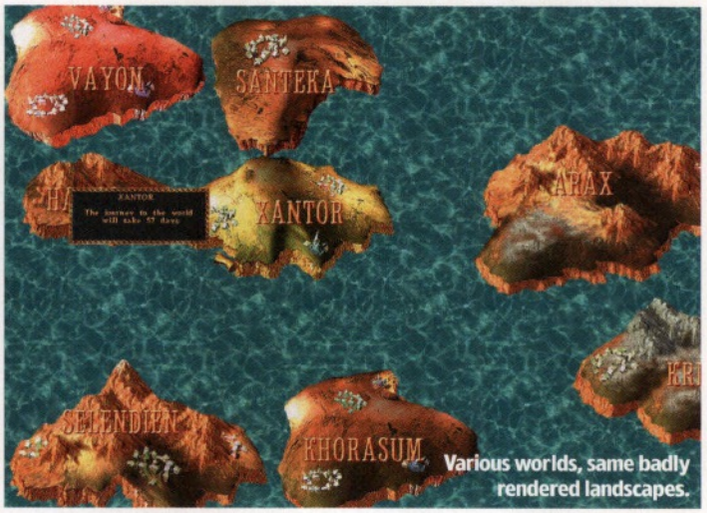
↗ Plenty of non-linear missions, unique look

↙ Slow turn-taking, weak AI, unintelligible plot

"Paradise lost – only for the very patient, a clunky, disappointing, dystopia."

40%

YOUR FIRST HOUR YOU'LL LOVE ↗ Cyberpunk atmosphere YOU'LL HATE ↙ Nonsensical dialogue



Various worlds, same badly rendered landscapes.

↘ ROLEPLAYING GAME

SPELLS OF GOLD

Gold? We wouldn't part with our coppers over this.

NEED TO KNOW

Price £20 **Publisher** Oxygen Software
Web www.oxygenint.com

Needs 150MHz CPU, 16Mb

Wants 333MHz CPU, 32Mb

Some of the most famous stories of all time stem from Russian roots, and we're not just talking about the one with the crazy monk and those gun toting Bolsheviks. So a fantasy RPG cum management game, such as this here *Spells of Gold*, developed in the new Russian Commonwealth, might well be expected to tap into a rich narrative history, in order to create something a little bit special.

Instead, the gripping job you're faced with here involves little more than travelling between isolated towns with just a knapsack of provisions to trade.

Though devoid of a comically gawky fraternal sidekick and a three-wheeled yellow van, our hero's life as an independent trader is full of occupational pitfalls. Between the twee towns of monks and merchants, bands of illiterate NPCs try to pilfer your stocks – either give in to their demands or engage in battle. Mouse-driven hack and slash is hardly awe-inspiring – most combat animations involve a silver stick bashing a heavily pixellated troll. Hours of trawling back and forth trading bread and crockery reward you with a larger blade with which to tediously poke one of the three recognisable flavours of foe.

When you decide that the door-to-door sales merchant career track is not for you (and believe us, you will), it's time to invest your riches in training for a discipline. Gold can be used to pay for your tuition fees in a school of magic or weaponry, enabling you to graduate as a fully-fledged mage or warrior. It's possible to pick and mix between the paths in the game, giving you some variety among the myriad benign tasks that await you. The driving plot intermittently drips into the game, giving hope that the pace will increase and coherence will eventually prevail, but this ain't the case: things continue to plod along with no obvious signs of a learning curve.

This haphazard combination is based on the worst of each of its components – the dull monotony of micro management, the implausibility of fantasy and the bewildering back-story of an RPG: a sure fire spell for abandoning your quest. **Kelly-Marie Dudley**

It sure is cold in them there hills...

PCFormatVerdict

↗ Not plot-led enough, dated retro graphics

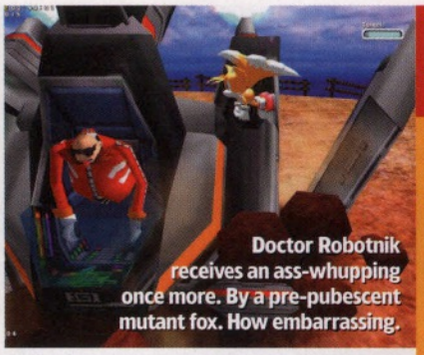
↙ Repetitive play, no coherent storyline

"The reason you ignored the merchant option on Careers Day – dull and dated."

48%

YOUR FIRST HOUR YOU'LL LOVE ↗ Buying bread YOU'LL HATE ↙ Wandering between towns

Pixel and vertex shaders? You'll be lucky if you see so much as a texture in this game.


Doctor Robotnik receives an ass-whupping once more. By a pre-pubescent mutant fox. How embarrassing.

One of the more enjoyable sub-levels is this high-altitude shoot-'em-up section.

DON'T MISS THIS!

Failing all else, our hearts are easily won over by big robots.

WHAT IT IS The last of the six non-secret characters you unlock is E-102 Gamma, a laserbeam-armed robot built by Dr Robotnik. Unlike most of the characters, he doesn't rely on speed or mega-jumps, but instead on, well, being a big robot with a laserbeam. More of this sort of thing, we say.

WHERE TO FIND IT You're rewarded with E-102, who looks a little like a one-man band, after completing the second plane-based level in which you storm Robotnik's flying fortress. Knock E-102 down three times upon landing and he's all yours.

↘ ACTION ADVENTURE

SONIC ADVENTURE DX DIRECTOR'S CUT

Alec Meer is afraid to ask exactly what the director cut out.

NEED TO KNOW

Price £40 **Publisher** Sega
Web www.sega-europe.com

Needs 600MHz CPU, 128Mb, 16Mb 3D card

Wants 800MHz CPU, 256MB, 32Mb 3D card

TIME TO COMPLETE 10 HOURS

REALITY CHECK Despite several experiments on our part, hedgehogs tend to die when painted blue.

Sometimes, we can't help but wonder if the thriving copy-protection hacking community on t'internet is less about maliciously depriving anaemic game developers of precious cash by copying their games than it is mere convenience by angered players. Take this inexplicably conceived console conversion, for instance (first on Dreamcast, re-made for GameCube and then again for PC, and boy, does it show) – every time you start the game, it asks you for not only CD1, but then CD2, running a lengthy 10 or 15 second check on each. Every time. Two different discs. Unbelievable. Thus we have absolute sympathy for any soul who visits a URL we can't mention here in search of a no-CD patch for *Sonic DX* – you go, gamer.

Sonic boom

Hardly the most ostentatious beginning to Sonic the Hedgehog's reintroduction to PC, then. Neither is hearing the blue one talk with a voice that would sound more natural on Dawson's Creek. When his perennial companion, Tails the Fox, arrives to the accompaniment of screeching soft rock, with the voice of a hermaphrodite child on methadone, all hope is seemingly lost.

So presentation, story, acting and graphics are all utterly abysmal, but two factors heroically scrape *Sonic DX* from the edge of catastrophe. The first of these is that there are so many characters, items and mini games to unlock, there's an enormous replay value. The second is the action stages; quite simply one of the most breathtakingly ridiculous experiences you'll ever have on your PC. Surprisingly evocative of Sonic's old 16-bit outings, these comprise fully 3D levels of hurtling along enormous, fantastical constructions at insane speeds, chucking you hundreds of feet into the air and expertly getting you through to the end by scripted luck as much as judgement. Towards the end of the game, these call for the same degree of jumping precision as any other Sonic game, but for much of the time it's quite happy to let you just enjoy the epileptic ride.

Pulp friction

But this is symptomatic of the underlying problem in the entire game: you're never completely sure of what it is that you're doing. The level design is completely illogical, the characters incomprehensibly banal and comically, it's apparently Tarantino-inspired, in that the entire plot only becomes revealed, flashback-style, once you have completed the game with all of the six characters.

It's astonishingly hard not to enjoy yourself at any given point in *Sonic DX*, but you're perpetually haunted by the awareness that this game is bad, really bad, in a number of ways you'd never have imagined from something of this pedigree. Mercifully, it just about squeezes into the 'so bad it's good' category. Just. **PCF**

PCFormatVerdict

↗ Hugely entertaining, despite itself

↙ How did this ever get past quality control?

MOD OPTIONS None

NET GAMING OPTIONS None

"Remember Tom & Jerry movies where they could speak? Exactly."

60%

LOOKING ELSEWHERE

SAVE YOUR MONEY FOR THESE CONSOLE CAST-OFFS DONE PROPERLY...

>>PCF157 **PRINCE OF PERSIA: THE SANDS OF TIME** 81%

>>PCF158 **BEYOND GOOD AND EVIL** 80%

>>PCF159 **CRAZY TAXI 3** 71%

THE BLUE PETTING GARDEN

More bonus material than you can shake a saucer of milk at.

Welcome to the Chao garden, *Sonic Adventure DX's* main bonus game. You may observe that references to the Game Boy Advance from the GameCube iteration have been badly concealed. Wonder what you're doing here, teaching tricks to stupid cutesy animals in a Tamagotchi/*Creatures* rip-off? You'd be right to wonder. It's not very good. Fortunately, a more compelling bonus lies in unlockable Sonic games, originally from the Sega GameGear. It takes some effort to get far enough through the main game to reach these, but they're more worth the price of entry than anything else here.

YOUR FIRST HOUR **YOU'LL LOVE** ↗ Madness ↗ English translation errors **YOU'LL HATE** ↙ Hideous soundtrack ↙ Pointless conversations

Let's see if you're worthy of calling yourself a duelist!
Remember, this isn't some kid's *Yu-Gi-Oh!* fan game, it's an official, licensed title. And it looks like this...

↘ COLLECTABLE CARD GAME

YU-GI-OH! POWER OF CHAOS: KAIBA THE REVENGE

Yu-Jest-Surely, more like. Is it the laziest cash-in ever?

NEED TO KNOW

Price £30 **Publisher** Konami
Web www.yugioh-card.com

Needs 450MHz CPU, 128Mb

Wants 650MHz CPU, Windows XP/2000

OK, where's the real game? Is it behind the sofa? No, that's dust. On the bookshelf? Lying in a drawer? Help us out, Konami, because it doesn't seem to be on this disc.

Yu-Gi-Oh! is a collectable card game – CCG – along much the same lines as *Pokémon* and *Magic: The Gathering*. Instead of slapping down the ace of diamonds, every card represents a monster, a spell or a trap. You place your little army on the board, your opponent does the same, and you match wits until one has obliterated the other's hit-points.

So far, so good. Here's the problem. While even the Game Boy Advance version of *Yu-Gi-Oh!* wraps this up with a proper quest format (in which you explore a city full of card battlers, meeting new opponents, building up your deck and entering tournaments), *Carry On Up The Kaiba* gives you just one solitary, rubbish opponent. You thrash him in minutes, and your reward is then in the form of extra cards to make it easier to thrash him next time. Hurrah! Each round is interspersed with badly drawn anime-style pictures, and booming, voice samples – usually of the blindingly obvious "I end my turn!" variety. And that's it. You thrash him. You reorganise your deck. You thrash him again. And again. And again. There's no multiplayer option, no quest mode and precisely zero effort has been made to jazz the action up for the PC – any hope of towering stone beasts and slinky swordmaidens locked in mortal combat is soon replaced by cards pinging a generic attack across the screen. To recap: pointless. Point. Less.

Yu-Gi-Oh! really isn't a bad CCG, and *Kaiba* does a decent job of bringing the bare basics of it to the screen – but a very half-hearted take on it. For genuine card-battling action, grab the Game Boy cart, or a few booster decks from your friendly newsagent. **Richard Cobbett**

A 'helpful' slowdown feature gives you more time to strategise.

PCFormat Verdict

Battle engine works well, with lots of cards

What's the use beating up one bad opponent?

"You have to be a real *Yu-Gi-Oh!* nut to get any enjoyment at all here." **36%**

YOUR FIRST HOUR YOU'LL LOVE ↗ Winning on your first go YOU'LL HATE ↙ The futility of it all

>>RE-RELEASES

CYBERSTORM 2: CORPORATE WARS

£5 Xplosiv

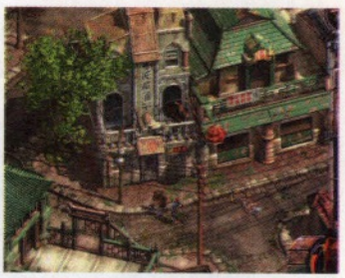
Ah, *Syndicate*. Now, there was a good game – an early Bullfrog masterpiece that had you orchestrating a team of cyborg agents in a cyberpunk metropolis. Unfortunately, budget releases don't bother digging for that sort of quality so we get this misjudged unity of turn-based and real-time strategy. It's solid enough, but in a tired sort of way. The boredom rapidly overwhelms.

PCFormat Verdict

Enhanced strategy through tweakable units

Slow, unbalanced experience

"Vaguely interesting strategy, but only worth it for genre fans." **59%**



COMMANDOS 2

£5 Sold Out

Let's be clear: progress is rubbish. It's given us stupidly small phones, and all manner of inferior sequels to previously fab games. *Commandos* almost had us believing otherwise with this brilliant strategy sequel, skulking behind enemy lines performing assassinations, thefts and puzzle-solving in fine Burt Lancaster style. The difficulty curve is horrendous but it's still great fun, and better than the reduced *Commandos 3*: we told you so.

PCFormat Verdict

Looks great, excellent strategy/detail

Awesomely hard, not many missions

"A wartime winner, if a little too newcomer-unfriendly." **89%**

AMERICAN MCGEE'S ALICE

£5 Sold Out

Office consensus is that 'developer's name in the title' isn't necessarily a recipe for hideously egotistical disasters. Basing a game on a nightmarish revisiting of the *Alice in Wonderland*, however, has more predictable consequences. Technically fascinating but fundamentally dull, it's worth visiting at this price just to see how art can (just) beat programming.

PCFormat Verdict

Well designed, haunting music

Never disguises platform-hopping roots

"Not as innovative as it looks, but interesting all the same." **70%**

HALF-LIFE 2

£5 Budgets-R-Us

Well, we were as surprised as you to see that the sequel to the greatest shooter of all time had gone straight to budget, but having played through all 30 minutes of the game several times, it's easy to see why. Unadventurous graphics, and the removal of all key characters from the first game leaves everyone disappointed. Not even worth buying for the *Sims*-like mini-game involving head crabs.

PCFormat Verdict

Earlier release than planned. April 1st, in fact

Sad cameos from Sonic and Mario

"Even with this score it's still going to be our game of the year, obviously." **2%**

Mod news

Kelly-Marie Dudley sets out to prove that the modding life needn't be rubbish – some mods are rockers.

1 MULTI THEFT AUTO FOR GTA: VICE CITY

Perhaps not as popular as *GTA Tournament*, this multiplayer mod is coming along leaps and bounds. The latest release rectifies some messy animations, but the blood-curdling lag still remains, along with promises to tidy it up and the reminder that it's a small price to pay for a 25-player flamingo pink artillery fest.

www.mtavc.com

2 EARTH'S SPECIAL FORCES FOR HALF LIFE

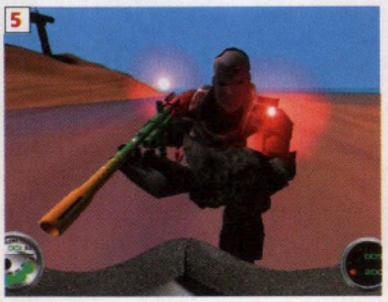
Based on the child-friendly manga antics of *Dragonball Z*, this mod combines traditional FPS action with the ability to throw down your paltry laser beam and engage in the complex mêlée combat. The titillating joy of morphing from humorous little man to angry rampaging beast should delight fans. Unsurprisingly, the public beta has held considerably more promise than any of the official *DBZ* releases.

www.esforces.com

3 THE ROAD TO ALLYSIUM FOR DUNGEON SIEGE

What is Allysium? We assume it's like Elysium but spelt wrong, although the developers of this fantastical RTS mod assure us the only way to find out is to embark on their mystical journey. This total conversion is set to offer up to 50 hours' gameplay, keeping the developers busy balancing spells.

www.allysium.com



4 REVOLT FOR CALL OF DUTY

Too soon for an Iraq conflict simulation? Not in the world of *CoD* modding. It's your opportunity to pit your revolt against regimes of debatable politics across the world, aided by an all-new arsenal of modern-day WMD and a sexed-up dossier to justify your bloodshed.

www.codmod.com

5 ULTIMATE SURVIVAL FOR UNREAL TOURNAMENT 2003

Do not be duped into believing that this is the first or last paint-balling mod that we'll see for *UT2003*. However, we can embrace the fact that this is a rather professional job and it's still a helluva lot of fun to play. If war isn't the answer, it must be paint mines.

www.planetunreal.com/ums

6 INFILTRATION FOR UNREAL TOURNAMENT

Had enough of squad-based shooter mods for *UT*? The gang at Sentry Studios might reaffirm your faith with this exceptionally professional reinterpretation – nifty enough to spawn a league of fans, a German television unveiling and a host of debatable merchandise tie-ins.

http://infiltration.sentrystudios.net

7 SEA OF DESTINY FOR MORROWIND

Although the gold version of *Morrowind* promises new quests and storylines, it's worth obtaining this unofficial expansion to enjoy far-flung destinations, improved armoury and the 300 extra NPCs.

www.rpgplanet.com/morrowind/sodp

DOOM III

100% unofficial sequels they didn't want you to see...

DUNGEON KEEPER 3
www.dkmod.tn-uk.net

Still bitter the official operation got shut down before it could be made a trilogy? Fans are resurrecting Horny with an up-to-date engine for more minion-dictating action.

FREESPACE: SOLAR WAR
www.geocities.com/generalyoda24/mainsite.html

Another modder disgruntled by the lack of sequels, this will be a space simulation set in the *Freespace* universe, liberally spreading its focus between marine and space combat.

CHINDITS
www.warwickmedia.com

Based on the exploits of elite Allied soldiers in the jungles of Burma, it'll be your chance to take the theatre of war further east than most mods.

Tales from another universe

Our lass in space, Keila Jedrik, aka **Al Bickham**, recounts her/his first PVP combat experience in *Eve Online*...

In the cold depths of space, still a13-jump hike from my destination at Crielere, a shaky message appears from my buddy Zwiss in the corporate chat window: "Contact! I've got contact!" A thrill runs up my spine. I've been training my combat skills since I entered the Eve universe, and I've been waiting for this moment for a long time.

I ought to stress at this point that I've never had much interest in the big-cash jobs: mining, refining, trading, hauling... frankly, industry leaves me cold. I'd rather roar through the ethers with my projectile weapons barking, cruise missiles soaring from my launchers to screw through the void and tear into another ship's hull. In short, I want to blow stuff up. However, my corp has always approached combat situations with a certain measure of caution. We've never charged in pell-mell, preferring to gauge our strength over time, and research the relative merits and demerits of different weapons systems.

Of course, all that caution flies out the window when Zwiss gets on the horn and tells me he's in a fight. I pull down the star-chart and ascertain he's only a couple of systems away. Reset the autopilot, engage afterburners, hold on mate, here I come! After a short but frantic flight, the last jump-gate dumps me into the system Zwiss hailed me from. One in-system jump later, I find Zwiss in his cruiser, facing down a pair of similar ships. I target the rogue Zwiss has already begun to damage, let loose with my howitzers, and activate the missile launchers. Let's dance. Ten seconds in, and Zwiss yells "RUN!!!" across the corp chat channel. And in the twinkle of a retro, his ship is engulfed in a conflagration of glowing ions and debris scratch one buddy. The pirates turn their attentions on the newcomer – me.

WUMP... WUMP... WUMP... Their cruise missiles slam into me, one after the other. I watch in horror and fascination as my shields drop in huge chunks. And just as I attempt to warp out of danger, one of the gits washes his warp-jammers over my ship. Silent, stationary and helpless, I watch them taking great-white bites out my hull.

I frantically hammer the warp button and, like a miracle, my foe's jammers halt for a moment. Just before they can loose off another salvo, my retros fire, my ship turns, and the warp drive kicks me towards the nearest space station. Looks like I'll live to fight another day. www.eve-online.com

@ **JEDRIK/AL BICKHAM**

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Pro Rugby manager 2004

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SENNHEISER
COMMUNICATIONS
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The best players rely on the Sennheiser Communications PC 155 USB, one of three brand new USB headsets. Thanks to the ultra-comfortable headband, hour-long game playing and internet surfing on your PC will become a totally new, exciting experience. Its noise cancelling microphone, inline volume control and the microphone mute function is sure to give you an added advantage. Sounds rough for the competition, right?
It's not a game, boy
Sennheiser UK Ltd, Freepost, High Wycombe, Buckinghamshire HP12 3BR. Brochure Line: 0800 652 5002 email: info@sennheiser.co.uk Web: www.sennheiser.co.uk
Sennheiser Ireland, G2 Calmount Park, Calmount Avenue, Dublin 12. Tel: +353 (0)1 429 4400 email: info@sennheiserireland.com Web: www.sennheiserireland.com

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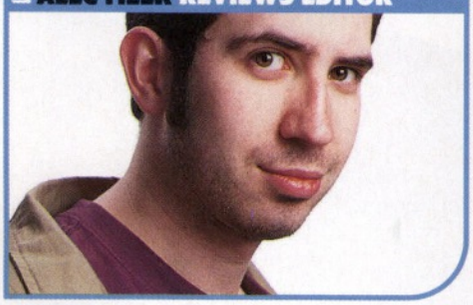
Gear/Gadgets/Apps/Utilities Definitive reviews

ALEC MEER REVIEWS EDITOR



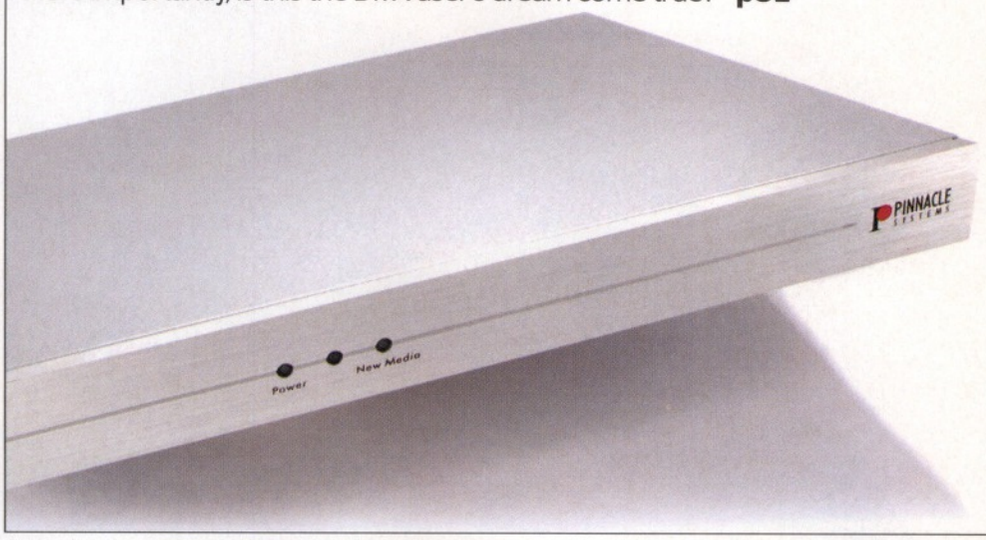
CENTRELESS MEDIA

Having finally had the chance to get my selfish, needy little hands on a prototype of Microsoft's Media2Go (think a hard drive-based MP3 player, but with a large colour screen and video playback – wantonewantonewantonenow), I've decided that I simply can't wait the 6, 12, 18 or however many months until these things are available to buy. Then I realised that I could simply make my own – I already own an almost unused PDA, complete with four-inch colour screen, and with some blind destruction of one of these new, 4Gb microdrive-based MP3 players doing the rounds, by retrieving the drive and sticking it into the CompactFlash socket of the PDA, I've surely stumbled on to a winning combination. So much so, in fact, that we're going to run a detailed tutorial on turning PDAs into movie players and generally hacking them next month. Hurrah!

alec.meer@futurenet.co.uk

SHOWCENTER

How long until the UK entirely forgets how to spell 'centre' properly? More importantly, is this the DivX user's dream come true? **p82**

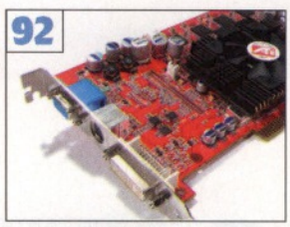


83

Shuttle XPC Zen
A mini-ITX PC with built-in Radeon graphics – too good to be true?

90

LaCie Big Disk
Ooh, 500Gb – go ahead and count 'em if you don't believe us.



92

Radeon 9800 SE
The 3D card equivalent of shop-soiled – bargain or busted?

MEET THE PCFormat TEAM

DAN GRABHAM
Ate vegetarian food, suffered explosive diarrhoea in a cinema toilet. Now taken up the Atkins Diet.
MOST WANTED
GeForceFX 5900 XT

JON HICKS
Spent more time dreaming about reviewing PDAs than he did actually writing the PDA Supertest.
MOST WANTED
Sony Clié

JEREMY LAIRD
So just what did Jezza the Gibber get up to at IDF? And why isn't he allowed into the US ever again?
MOST WANTED
A 64-bit Intel chip

ADAM OXFORD
Seems to think that just because he's editor, he's somehow in charge. He'll learn. The hard way.
MOST WANTED
R.E.S.P.E.C.T.

DAN GRILIOPOULOS
Whinged incessantly. It's no one else's fault that you concussed yourself with a lampstand, Dan.
MOST WANTED
Pinnacle ShowCenter

RUSSELL JAMES
Couldn't tell the difference between PCI and AGP. Russell, your concrete boots await you.
MOST WANTED
A Voodoo 2

OUR TECH SPECS

1. PCF Labs
We've been reviewing kit in our labs for over a decade, and in that time have graded nearly 4,000 individual pieces of hardware, and looked at many, many more in features and tutorials.

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Only when a piece of equipment exceeds our expectations in terms of innovation, excellence and value for money does it get one of these.

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It's easy to spend a fortune updating your PC, but we pride ourselves on having an eye for a bargain. When we see one, we mark it with this.

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We are PC fans writing for PC fans, so we want to know what you think. Tell us your thoughts in our forum, over at **forum.pcformat.co.uk.**

OUR SCORING SYSTEM
0-19% Unusable or astoundingly rubbish
20-49% Largely ineffective and useless
50-69% Some decent features but uninspiring
70-79% Good kit without the must-have factor
80-89% Outstanding. A *PCF* Silver Award winner
90+ Exceptional. A *PCFormat* Gold Award winner

In this month's T&T...

82 T&TCONVERGENCE
What would life be without blue LEDs and aluminium?

88 T&TUPGRADES
My God, it's full of gigabytes...

92 T&TGAMING
It's about having fun, after all.

94 T&TMOBILE
We really, really hate laptop touchpads.

96 T&TSYSTEMS
Build or buy? We end the... Oops, we did that last month.

100 T&TSOFTWARE
We want more software in holographic boxes, please.

104 T&TSUPERTEST
A million of the best PDAs fed to a giant robot, or something.

PINNACLE SHOWCENTER

£164 Pinnacle

Alec Meer pushes aside all the discarded pizza boxes and beer bottles to make some room at the centre of his digital home.

Somewhere on this godforsaken Earth, there must be someone who's bought one of these to use for purely legitimate purposes. Someone, somewhere, has gigabytes upon gigabytes of archived home movie footage, and likes nothing better than to sit down of an evening and watch it all on his widescreen telly. That person does not have any dodgy DivX rips of movies downloaded from Bittorrent or eDonkey – he doesn't even know they exist. Moreover, the only MP3s he has are recordings of his own acoustic guitar noodlings. He has thousands of these, and hence needs a dedicated multimedia server like the ShowCenter to pipe it into his living room. Really. He cannot imagine that anyone would ever use it for less than salubrious purposes.

Preposterous, isn't it? It also begs the question of which media, exactly, we used to test the ShowCenter with. Let's just say that all those snuff movies we've featured our former editors in over the years are no longer without a home. For this is truly a wonderful piece of kit – quite simply, it streams movies and music from any PC to your television or projector, without having to have the computer attached directly to the TV. It works over a network connection, inevitably, so the ideal set-up is to have a router in your house, although it must be said we couldn't get it to work like this for love nor money, and in the end settled for a direct link to the PC with a crossover CAT 5 cable.

Other than that, set-up was a doddle, although having to inform the server software on the PC every time you want to add new media to the ShowCenter's database is an irritation (a mooted folder-watching feature was a little intermittent). Additionally, it doesn't retain folder trees for movies, so you may end up with an enormous alphabetical list if you've got a lot of them. Fortunately, ID3 tags are supported in MP3s, so finding a specific track is fairly straightforward. Picture quality, thanks to a choice of Composite, S-Video or RGB component or SCART, is exceptional, and both co-axial and optical digital audio sorts out all your surround sound issues, too. The only real trouble is the speed – it'll be a good three or four minutes between turning the Pinnacle on and watching a movie file, once you've factored in the slow boot-up and the hideously delayed network connection time. Once it is up and running, it's simple to control and quick to react, and even offers neat features such as picture-in-picture preview windows for movies and photos. It's not perfect, but it's definitely a cheap and effective alternative to buying a Media Center PC. **PCF**

"This piece of kit streams movies and music from any PC directly to your TV or projector."

PCFormatVerdict

Smart, stylish, versatile and inexpensive

Slow to operate, some filing issues, didn't like our router

"The Media Center dream realised without the need for a separate PC, although it's strangely slow at times."

86%

→Detail

Video formats supported
DivX, XVID, MPEG-1, MPEG-2
Audio formats supported
MP3, PCM
Picture formats supported
JPEG, BMP
System requirements
1GHz CPU, 256Mb, 10Gb HDD space, Ethernet port or router, Windows 2000/XP
Video outputs
S-Video, component RGB, Composite, RGB/Composite, SCART
Audio output
Digital co-axial, digital optical, 2 x analogue stereo
PC interface
10/100 Ethernet or 802.11b wireless networking (requires separate PCMCIA card)
Web www.pinnaclesys.com
Phone 01895 442003

PC FORMATS

The ShowCenter supports most video formats out of the box. Its PC software automatically converts other formats, such as WMV and WMA, to compatible ones, but this takes an exceedingly long time on large video files.

WI-FLY

As expected, the ShowCenter supports Wi-Fi. Pinnacle has its own card, or it'll support various PCMCIA 802.11b cards. It won't work over wireless G yet – so high bit-rate video is a no-no – but firmware updates are regular and often.

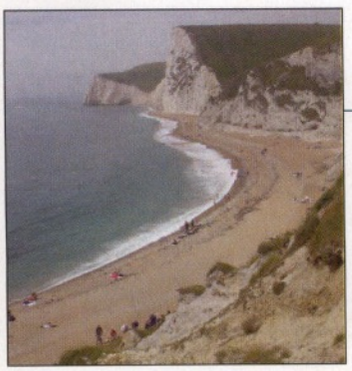

PHOTO FIT

You can also use the ShowCenter as a photo viewer – it can access libraries of digital images and display them in full-screen. It'll even perform automatic looped slideshows, if endless photos of the cat are your idea of ambience.

DM-20 CONFERENCE KIT

£527 Olympus www.olympus.com

Sometimes it's tough to know what to make of this portable voice recording and music playback kit. You certainly can't knock it for features, including as it does everything from a Bond-style alloy carry case to a pair of high-fidelity microphones and even a set of mini tripods. Sound quality, for both recording and playback, is nothing short of stunning. With integrated SRS WOW surround sound, MP3s in particular are wonderfully punchy and transparent with the right headphones. But a limited 128Mb of flash memory is disappointing at this price, even if it does allow eight hours of WMA-encoded voice recording.

PCFormatVerdict

Fabulous sound quality and peripherals

Staggeringly expensive, limited storage

"A very precise tool for a very specific job – at a price."

80%

XPC ZEN ST62K

£180 (approx) Shuttle www.shuttle.com

Another day, another mini barebones system from Shuttle, the company that almost single-handedly created the small form factor PC market. This model is based on ATI's 9100 IGP Pentium 4 chipset, so in most regards it's a powerful performer with full support for the usual dual-channel memory and 800MHz bus speed suspects. However, there's no AGP slot, so you'll have to make do with the onboard Radeon 9000 chipset. It's as good as integrated graphics gets, but if you're remotely serious about gaming, look elsewhere. And on the aesthetic front, you either go with the chintzy white front fascia or you don't. We don't.

PCFormatVerdict

Good basic spec and lots of expansion ports

Are cheaper alternatives with AGP ports

"Shuttle makes some compelling bread-box systems; this isn't one."

69%

510MP

£279 Samsung

If you're looking for proof that size matters, this is it.

We're a pretty stylish bunch here at *PCFormat* (except Alec, of course, who dresses like a homeless Hungarian gypsy). In many ways, then, this Samsung monitor is right up our collective alley. It's a decent looker which oozes quality and would complement any modern kitchen or living room. That said, we're not totally convinced by the integrated speaker baffle. It has the effect of visually shrinking the LCD panel itself, and the less said about the thin and unconvincing sound it puts forth, the better.

As for the screen, though, it's a cracker. Whether it's document editing on the desktop, watching movies or playing games, this monitor belies its ordinary on-paper specification by being up there with the best. It's an excellent panel which boasts the full gambit of must-have LCD attributes, including fast response times and strong brightness and contrast. Only mediocre viewing angles let the side down, but given the relatively diminutive size, it's not much of an issue in practice. Likewise, we were impressed by the quality of the integrated TV tuner. Broadcast TV rarely looks fantastic on any kind of LCD monitor, but the Samsung makes a better fist of it than most.

If that's the good news, get ready for the bad. This is a 15-inch monitor and, call us spoilt, but we can't quite get our heads around going for anything less than a 17-inch screen on the desktop. It's also far too small for anything other than occasional use as a TV. That's not to say it's poor value for money, but a native resolution of 1,024 x 768 is very restrictive if you're used to 1,280 x 1,024 or more.

Jeremy Laird

→Detail

Panel size 15-inch
Native resolution 1,024 x 768
Contrast 350:1
Brightness 250cd/m²
Response 25ms
Viewing angles 150°/120° H/V
Dimensions 355 x 358 x 184mm
Inputs S-Video, composite, antennae, SCART, audio
Other TV tuner, IR remote, Teletext
Web www.samsung electronics.co.uk
Phone 01932 455000

PCFormatVerdict

A quality item with an excellent panel, plenty of inputs plus a TV tuner	"At this price point there are several 17-inch panels available – that's where our money would go."
It's an impressive performer, but it's also simply too small for frequent use	78%

XP4 EVO

£125 www.pcnextday.co.uk

Sometimes, you have to be cruel to be kind, so we're not going to pull any punches on this mini barebones system: it's pretty ghastly. The front bezel is a mix of cheap, silver-painted plastic and frightful blue inserts. As a fashion statement for a trendy living room, it's completely off-target. Then there's the spec. The four USB sockets and integrated LAN are handy enough, but there's no AGP socket, no SATA support and – shudder – only a single DIMM socket. In fact, the EVO's solitary saving grace is the ability to use a boggo P4 heatsink and fan on the Intel 845-equipped motherboard.

PCFormatVerdict

It's, umm, small and, er, quite cheap	Poverty spec limits your options
"Spend an extra £30 on a Fur Fusion (see issue 157)."	55%

CTX S962A

£423 CTX www.ctxeurope.com

The cheapest 19-inch LCD panel in our recent monitor supertest (*PCF* 158) came in around the £450 mark, so we were intrigued to see this CTX model going for not much more than £400 on Ebuyer (**www.ebuyer.co.uk**). Cased in plastic, it's a thoroughly unremarkable looking beast, but we'll forgive any number of aesthetic faux pas in return for a bit of gleaming flat panelage, and this monitor duly delivers. It's bright, with strong contrast and excellent viewing angles. Response times are par for the 25ms course – good enough for most people's needs if not ideal for fragging freaks or movie maniacs.

PCFormatVerdict

Good all-round performance and value	Barebones chassis, no DVI connection
"Well worth a look if you don't mind average response times."	88%

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iDEQ 200P
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- NVIDIA nForce3 150 Chipset

iDEQ 200T
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- Intel 865G + ICH5R Chipsets

iDEQ 200N
- Support AMD Athlon XP
- NFORCE2 IGP + MCP-T Chipsets

iDEQ 200S
- Support Intel Celeron / Pentium 4
- SiS 651+962 Chipsets

iDEQ 200V KM400
- Support AMD Athlon XP
- VIA KM400 + VT8237 Chipsets

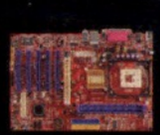
iDEQ 200T
Golden Bear Award
Bjorn 3D.com
Nov. 2003 USA

iDEQ 200P
Excellent Product Award
Gpworkbench.com
Oct. 2003 USA

iDEQ 200N& 200T
5-star Award
HWExtreme.com
Dec. 2003 USA

iDEQ 200T
Highly Recommended Award
DOS/V Power Report
Dec. 2003 Japan

iDEQ 200S
Recommended Award
PC PRO
Jan. 2004 UK



P4VTB PT800

- VIA PT800/8237
- FSB 800
- DDR 400
- AGP 8X
- LAN
- SATA/RAID
- ATX FormFactor

M7NCD

- NVIDIA NF2 400/MCP
- FSB 400
- DDR 400
- AGP 8X
- LAN
- ATX FormFactor

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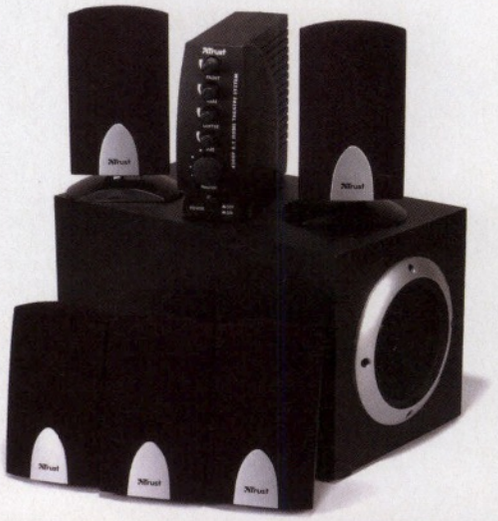

VIEWSONIC PJ650

£1,400 ViewSonic

The future's bright, the future's 2,000 ANSI lumens.

When it comes to projectors, there's little joy of specs to be had. The specifications given for most projectors are often little more than a rough guide to the practical end-user experience. So it's wise not to be swayed by a few hundred clicks of quoted brightness or contrast when choosing a projector. But when a product appears with the kind of on-paper advantage this ViewSonic example boasts, even the seen-it-all-before cynics on PCF take notice. Twelve hundred lumens is the most we've seen at this price point, so a full 2,000 lumens is mighty impressive. Make no mistake, if brightness on a budget is what you're after, look no further. Firing up the PJ650 inside the PCF office had us downing tools faster than you can say Arthur Scargill. What's more, unlike every other affordable projector we've seen, it has sufficient oomph for daytime presentations, even if it's not quite dazzling enough for comfortable matinee movie viewing.

Colour accuracy is a further strong point – always the one benefit all agree LCO has over DLP. Unfortunately this doesn't add up to a flawless multimedia performance. Thanks to the scorching lamp and that LCD technology, the PJ650 suffers poor contrast, with blacks appearing washed-out and grey. It's acceptable when displaying full-screen, 4:3 aspect content, but the bright grey bars above and below wide-ratio DVDs are very distracting. Consequently, we can't help imagining how stunning the results might be if all that blazing brightness were harnessed by a DLP chip. And while we're sticking the boot in, the much-touted three-year warranty doesn't cover the lamp – you're on your own after just a year. **Jeremy Laird**

→Detail

Projector type
Three-panel PolySi LCD
Native resolution
1,024 x 768
Brightness
2,000 ANSI lumens
Contrast 350:1
Lamp 150W
Dimensions
270 x 210 x 70mm
Weight 2.7kg
Warranty One year on lamp, three years on other parts and labour
Web www.viewsonic.com
Phone 01293 643900

PCFormat Verdict

Brighter than a brain-pie, good value, compact and highly portable

So bright that the contrast suffers, noisy fan, one-year lamp warranty

"Very hard to beat for 2D presentation work. A little flawed for gaming and movies, though."

82%

4500P 5.1 HOME THEATRE

£60 Trust www.trust.com

Sixty quid for a 5.1 speaker system for your PC or DVD player sounds like a steal, until the web reveals the keen prices on surround bins. The Trust package is pretty good: a fragile build masks decent sound and a neat control unit. Bass is not too boomy and the speakers look smart, if a little bland. Problem is, the same money also buys a Creative Inspire P580 5.1 speaker system, or the Hercules XPS 510 Classic. And another 40 quid will buy the Inspire 5.1 5500 digital package with external decoder. While the Trust 4500 P isn't a disaster for sure; it struggles to be heard, even at the budget end of the market.

PCFormat Verdict

Surround sound for a steal

Rather bland, faces stiff cheap competition

"Someone can break Creative's stranglehold. But not Trust"

68%

738AV LCD POWER VIDEO

£130 Trust www.trust.com

One for the books, whatever they are and whichever fool is keeping them – this here's a video camera that's actually better for still photos than it is for movies. The trouble is that no matter how grand an idea this is, recording film to SD cards isn't entirely practical. Even were you to buy a 512Mb card (which costs more than this camera), that's only 112 minutes of video. But for short clips it's massively enjoyable to use, with fairly decent picture quality, and as a point-and-click camera, pics are surprisingly good for something so short on features. See the results in this month's Gril's Grills on p. 11 – see how real-life our testing is?

PCFormat Verdict

Gadgety feel, decent images and video

Low tweakable settings, only memory card

"About as amateur as video gets, but a huge amount of fun too."

73%

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april 2003 gold PCFormat

A7N8X-E DELUXE WIRELESS EDITION

£92 Asus

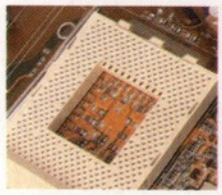
There's something in the air tonight...

There are some ideas that are so brilliant, it's hard to fathom why it's taken so long for them to see the light of day. This is exactly what you'll be thinking when you get your hands on the latest motherboard from Asus. The concept is simple enough – integrate wireless LAN into a standard motherboard – but it's the execution of this idea that'll really impress.

If you're looking to build a server to connect a variety of deskbound and laptop machines together, you need look no further. This motherboard comes with everything you need bar the cables, and that's whether those machines use gigabit Ethernet, traditional 10/100 Ethernet, or the far snazzier Wi-Fi. Not bad for a motherboard that costs less than a ton, eh?

It isn't just about networking, either. Inside the sizeable box you'll find all the goodies that you'd expect from a modern Athlon motherboard. Three memory slots provide support for up to 3Gb of DDR400 memory and you can, of course, slot in any of AMD's most recent 32-bit offerings. There are five PCI slots to play with, and as this is aimed at the more serious user you also get an AGP Pro 8x slot to slam your graphics card into. Serial ATA RAID, six-channel audio and IEEE1394 finish off the round of goodies, with a smattering of PCI plates to make sure you get the most from the mobo.

The performance on offer is decent enough, if not quite competing with the faster motherboards out there, but it's those added extras, such as wireless LAN, that really make this the motherboard to search out, especially at this price. Recommended. **Alan Dexter**



→Detail

Chipset nVIDIA nForce2 Ultra 400
CPU Athlon XP 400/333/266/200MHz FSB
RAM 3x DDR400 (Max 3Gb)
Slots 1x AGP Pro 8x, 5x PCI, 1x ASUS Wi-Fi
Drives 2x Ultra ATA 133, 2x Serial ATA RAID
Rear ports 2x PS/2, 4x USB 2.0, 1x Gigabit Ethernet, 1x 10/100 Ethernet, 1x serial, 1x parallel, 5x audio
Extras 2x USB PCI plate, 2x IEEE1394 plate, Wi-Fi daughter card, aerial
Web http://uk.asus.com
Phone 0870 120 8340

PCFormat Verdict

Wireless LAN, gigabit and 10/100 Ethernet, strong feature set

Less tempting if you don't need Wi-Fi

"Why spend extra on a dedicated access point when this motherboard does it all, at a brilliant price."

91%

april 2004 silver PCFormat

WD740GD RAPTOR SATA

£181 Western Digital

Say hasta la vista to the 7,200rpm hard drive.

We all know the drill when choosing video cards and processors – buy the best your budget will allow. But when it comes to hard drives, most folk subscribe to the Schwarzenegger Doctrine: bigger is better. But for those of us who like a little brain with our brawn, there's more to data storage than gigabytes of girth. For day-to-day use, hard disk throughput is a greater contributor to performance bottlenecks than your choice of CPU or graphics card.

Currently, the de facto rotational speed standard for desktop hard drives is 7,200rpm. While this isn't the first 10,000rpm drive to fall under our unforgiving gaze, it is the only example to make a reasonable case for home PC use. And before you ask, the answer is yes, those extra 2,800 revolutions do quantifiably boost the Raptor's performance compared with conventional 7,200rpm drives. Pitted against our standard-issue 7,200rpm desktop drive, Western Digital's finest put on a crushing display of data displacement. In *HDTach*, the Raptor's random access time of 7.5ms and read burst speed of 117.1Mbps are well ahead of the figures of 15.6ms and 84.5Mbps from our yardstick drive. Likewise, the combined read/write results of 47Mbps versus 36Mbps in *SiSoft Sandra*'s disk tests tell the same story.

But don't toss your favourite 7,200rpm friend on the fire just yet. With a modest capacity of 74Gb, this drive doesn't have the space to replace your typical 100Gb plus workhorse for storage purposes. Use it as a pure operating system and application drive, backed up by a bigger drive for media storage. **Jeremy Laird**

→Detail

Capacity 74Gb
Rotational speed 10,000rpm
Buffer 8Mb
Average latency 2.99ms
Other Fluid dynamic bearings, tagged command queuing
Web www.westerndigital.com
Phone 01372 360055

PCFormat Verdict

It's the fastest desktop hard drive we've ever seen

Very, very expensive given the limited storage space

"A must-have for discerning PC performance aficionados, but too expensive for most."

85%

www.kott-game.com

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Countless cutscenes and animated events!

PC ZONE, 14/01/2004
"Not since 2001's Severance have we enjoyed a truly outstanding dose of crunching sword on bone action."

XBOX GAMER, 01/01/2004
"... plays well and is surprisingly addictive."

P2 MAGAZINE, 10/01/2004
"Graphically Knights of the Temple impresses..."

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*Sony PlayStation®2 only **Microsoft Xbox Live only

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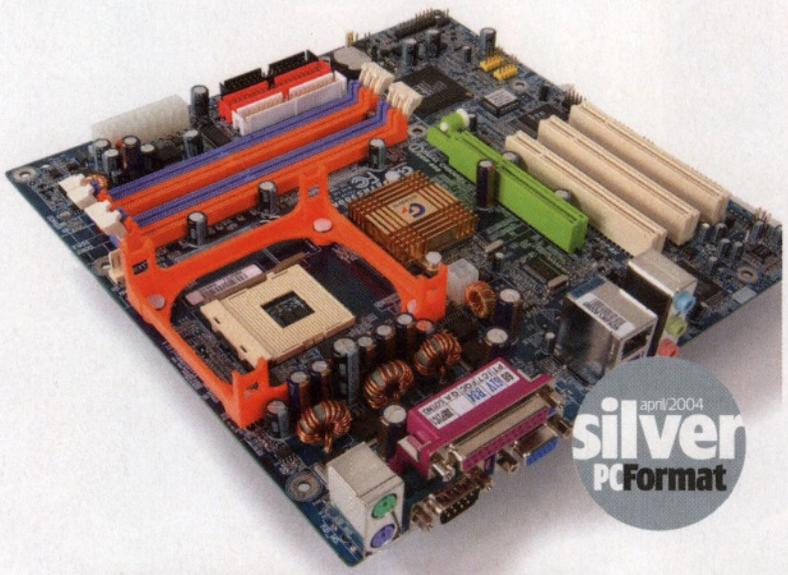

GA-8TRS300M

£67 Gigabyte Technologies

For those that like their components on the smaller side.

Despite what your loved one may tell you, size does matter. In fact, when it comes to computers, it can be crucial. If you have a smaller system that you'd like to upgrade, or you're looking to build a smaller than normal machine from scratch, then a micro-ATX motherboard is the way forward. The latest take on this standard from Gigabyte is a tempting budget realisation of the small-machine's dream. Supporting the latest hyper-threading spins of Intel's processors and DDR400 memory, the GA-8TRS300M certainly ticks the right boxes for any prospective upgrade. It scores on the price front, too, but this is only possible thanks to some serious culling of those extras that have become standard on most enthusiast-level offerings. Gigabit Ethernet? FireWire support? 6.1-channel S/PDIF audio? Forget it.

Don't be fooled by the 8TRS300M's scaled-down size, though – ATI's chipset packs some impressive features into its diminutive design. The most important of these is the full DirectX 8.1-supporting graphics engine that takes its inspiration from the Radeon 9200 core. This is purely a mainstream solution that withers next to a GeForce FX 5950 Ultra, but compared with other integrated solutions, it's a much-needed breath of fresh air for the P4. It's capable enough for DX8.1 games, with *3DMark2001 SE* seeing 40fps in the high-quality tests.

For all its attractive assets, Gigabyte's smallest motherboard does have a few marks against it. The memory throughput is mundane (ATI is working to improve throughput on its next chipset) and you only have two USB ports to play with. Even so, for the amount you're paying, this is still an extremely attractive way of building a small yet capable system. **Alan Dexter**

→Detail

Chipset ATI RS300
CPU Intel Pentium 4
RAM 4x DDR DIMM slots, 4Gb maximum
Slots 1x AGP 8x, 3x PCI
Drives 2x ATA 100 IDE
Rear ports 2x PS/2, 2x USB 2.0, 3x audio, 1x serial, 1x parallel, 1x VGA
Extras 2x parallel ATA cables, 1x floppy cable, ATX plate
Web http://uk.giga-byte.com
Phone 01908 362700

PCFormatVerdict

- Very affordable, integrated DirectX 8.1 graphics engine, AGP 8x slot
- Unimpressive memory throughput, only two USB ports, lacks sexy extras

"Beats Intel's integrated graphics hands down, but don't expect too much from it. Amazing price, too."

82%

BIG DISK

£450 LaCie

We trust that title leaves nothing to the imagination.

Just think what you could do with 500Gb of storage space. You could back up your entire life, assuming you haven't had a succession of breathtakingly exciting years. LaCie is the first company to take us up to this mammoth capacity, beating the previous best from Western Digital by 250Gb. Pay homage to the Big Disk.

The huge capacity isn't the only headline-worthy feature of this hard drive, either. Its main interface is the rarely-used FireWire 800 – twice as fast as standard FireWire. With more companies releasing add-in FW800 cards for both desktops and laptops, this could become the new standard. LaCie is armed and ready.

The Big Disk is also capable of FireWire 400 and USB 2.0 data transfer, so its future-proofness doesn't come at the expense of current usability. In our tests, though, the performance boost given by the newest interface was apparent. The biggest gain was in CPU usage. USB is notoriously demanding, so the adoption of a super-fast, low-maintenance connection can only be a good thing.

You can hardly expect LaCie to fit 500Gb into a device the size of a thimble, and the name's a bit of a give-away, so it comes as no surprise that the Big Disk is, ahem, rather large. You're certainly not going to lug 2.5kg around on a regular basis. That doesn't mean it's ugly, though; the silver chassis is no Beyonce Knowles, but it's still bootylicious enough for us. The only problem is the price: £450 is steep even for such huge capacity. As much as you may want it, it'll be a while before you really need 500Gb. If you only have 50Gb of data, you can buy a suitable disk for less than £100, and carry it around with you without breaking a sweat. **Russell James**

→Detail

Capacity 500Gb
Interface FireWire 800, FireWire 400, USB 2.0
Rotational speed 7,200rpm
Buffer 2Mb
Size 173 x 44 x 272mm
Weight 2.5kg
Web www.lacie.com/uk
Phone 020 7872 8000

PCFormatVerdict

- More storage space than a family saloon, FireWire 800 interface
- You may need a garage to keep it in, and a small loan to afford it

"Useful but expensive. But if you do want positively the biggest, then this is it."

78%

PC CD

"THE GRAPHICS IN DESERT RATS ARE SENSATIONAL"

Adrenaline Vault, Feb 2004

12+ www.pegi.info

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Digital Jesters

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NAMCO 5-IN-1 ARCADE CLASSICS

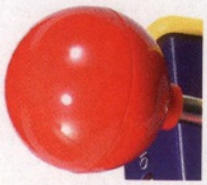
£25 Jakks Pacific

Old pie-face makes a retro return; you're guaranteed 10 full minutes of fun.

And they say Lara Croft is a franchise milked to within an inch of her life. Did Lara ever have an early 80s whimsical children's cartoon series based on the comical antics of her and her family? Including a Christmas special featuring a comatose Santa? No. But Pac-Man did, and despite the shame of it all, we love the iconic little sod all the more for it.

So it's great to have him back in the form of this joystick-cum-console, which plugs directly into the composite video port of your TV, projector or monitor. It features five classic Namco games built into its covetable *Pac-Man* arcade machine design, much like the Atari TV Games model we reviewed back in *PCF* 148. Pac himself is, of course, the star of the show, and as simplistically addictive as ever, with *Galaxian* and *Dig-Dug* close seconds in the retro fandom stakes. *Rally-X* and *Bosconian* mean rather less to us, and are definitely less interesting games. The real joy comes from the joystick, a wonderfully designed aluminium shaft and red knob setup – never has only being able to move in four directions felt so satisfying. It's such as shame you can't link it up to your PC to use as a retro controller in an arcade emulator.

The question is, of course, is there any reason whatsoever to buy this outside of pure nostalgia? Well, you're likely to derive more entertainment from it than 90 per cent of PlayStation 2 games, but it's not exactly going to keep us off *Far Cry* and *Battlefield Vietnam* for more than a couple of hours. **Alec Meer**



→Detail

Interface Composite video and mono audio (1x RCA)
Power 4x AA batteries
Cable length 2.5m
Games Pac-Man, Galaxian, Dig-Dug, Rally-X, Bosconian
Buttons One, plus start and reset switches
Web www.firebox.com
Phone 0870 241 4289

PCFormatVerdict

To put it simply, it's Pac-Man in a joystick

it's more about gimmick than innovation

"Well, we think it's an awful lot more real than *Half-Life 2* right now."

74%

RADEON 9800 SE

£115.50 Sapphire www.sapphiretech.com

As if to masochistically blemish its currently saintly reputation, ATI's 9800 SE chipset appears to be a cruel trick waiting to catch out those fooled into thinking bigger is better on the numbers front. It's aimed more at the OEM market than retail sales, but if you buy a new system that claims 'Radeon 9800 Graphics!!!', make sure those graphics aren't these – if you follow our drift. Put simply, the 9800 SE is outperformed every step of the way by the £2 more expensive 9600 XT (**www.ebuyer.co.uk**). And you get a *Half-Life 2 voucher*. Get that instead, or save up for a bargainous 9800 Pro, for under £200 at the same site.

PCFormatVerdict

Cheap 9800 chips

Oodles more performance from 9600 XT

"A nasty surprise for those who think the 9800 is king."

60%

V9880 ULTRA

£333 Asus www.asus.com

Another card that succeeds in further muddying the already murky waters of graphics labelling, the V9880 Ultra is Asus' card based on the high-end nVIDIA 5900 Ultra chipset. The reference two-slot cooler has been removed in favour of a slimline copper array with two fans. We're not too worried by double-width heatsinks, but it does mean that this card could be used in small form factor cases. Performance is as you'd expect for the chipset (see *PCF* 152), and the software bundle is good, but you'd be foolish to invest over £300 in a graphics card when the next gen of high-end hardware will soon be making an appearance.

PCFormatVerdict

Quiet, slim and cooler

New cards really aren't far off, now

"The 5950 Ultra remains unchanged: but equal performance for less now."

70%

NF340 RACE MASTER

£30 Trust

A wheel that works the arms as hard as the road.

Gaming wheels has a pretty straightforward job to fulfil – get us to the finish line faster and immerse us that little bit more in our racing experience along the way. No thrills required. This hasn't stopped every manufacturer from coming up with a variety of go-faster stripes and official endorsement flab to turn our heads their way, though. But no such superficiality for Trust, who has always relied on no-nonsense peripherals to win our affections. The Race Master is no different.

True, F1 team Minardi is featured on the box but there isn't a whiff of endorsement once you've clamped the thing to your desk. In fact, there's not a flash of colour in the design, bar a single LED to acknowledge that the wheel is ready for racing. Six function buttons and the obligatory d-pad for in-car views take their place on the centre panel, with two F1-style gear levers under the wheel. All standard stuff. The wheel itself is entirely made of textured rubber, which takes some getting used to but provides a firm grip for sweaty paws. That's handy because the Race Master is a stiff little customer. Fine on the gentle curves of your fave F1 game but a veritable workout on the likes of *Colin McRae 4*. The device looks as bulky and hefty as any force feedback wheel on the market, and it feels it, too. Two hours on the dirt of *McRae 4* and your biceps are bulging to breaking point.

Thankfully, your legs are excused from the physical going over because the equally weighty pedals keep slippage during prolonged play to a minimum. The lack of a dedicated driver could cause compatibility problems, though, and the fact that force feedback comes for a mere tenner more is enough to make you look elsewhere. **Mark Sutherns**

→Detail

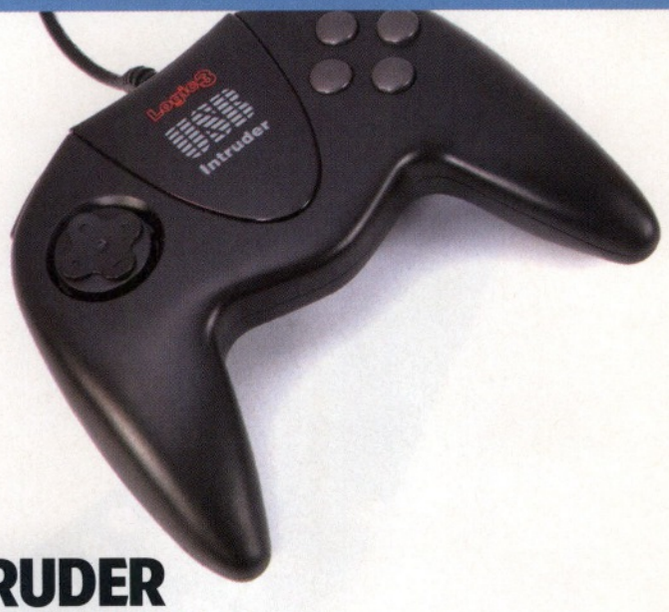
Features
Rubber coated wheel, six function buttons, two gear shift levers, 8-way direction view d-pad, table clamp
Interface USB
Web www.trust.com
Phone N/A

PCFormatVerdict

- Does the job while being durable enough to take any knocks
- Heavy and unresponsive, resulting in paralysis of the arm on long sessions

"A rock solid, heavily built wheel that puts an unnecessary demand on our weedy little limbs."

69%



INTRUDER

£8 Logic 3 www.logic3.com

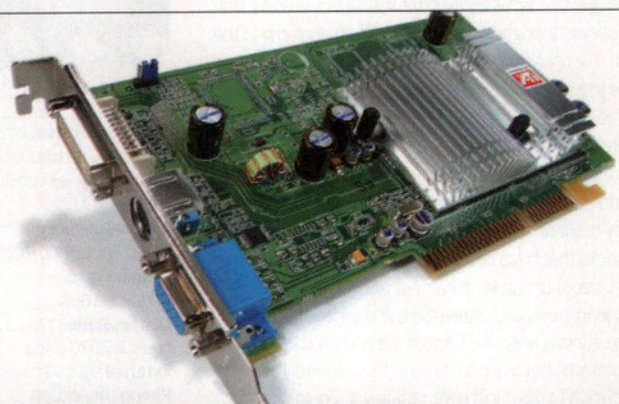
You probably aren't expecting much from a sub-£10 joypad, so you won't be disappointed by Logic 3's unambitious Intruder. In fact, you might even be a little impressed by it – we are. The build quality is good and the finish OK, if you can handle the large and intriguingly pointless 'USB' logo in the middle; when, exactly, was the last time you saw a peripheral that wasn't USB compatible? There are just the four buttons on the front, and four more on the shoulder pads, which give a nice round eight in total, and it sits in your hands comfortably enough for something so cheap. The inherent problem with all PC joypads, though, is why? If you really, really must have one, it's worth spending the extra for analogue sticks and rumble effects. If you can't afford those extras, then the keyboard is a perfectly acceptable alternative. It is in our opinion, anyway.

PCFormatVerdict

- Sturdy design and enough buttons
- Nasty USB logo, no extra features

"Not bad for eight quid, but is it better than using a keyboard?"

73%



RADEON 9600 SE

£63.45 Sapphire www.sapphiretech.com

Another less than impressive offering that will only confuse those with its 9600 moniker – the SE version of ATI's mainstream chip is, like the 9800 SE opposite, a higher end part with half the core disabled. It's a way of selling on flawed chips at a discount price. And like the 9800 SE, the higher clock speed doesn't compensate for the reduced memory bandwith: it's outperformed by similarly priced Radeon 9200 cards in every benchmark that doesn't use DirectX 9. Frankly, though, there's no sub-£100 chip at the moment that can match bargain basement clearance versions of the last hardware generation – Radeon 8500s and GeForce 4200 Tis – if you can find them. And if you're after a card specifically for gaming, you have to spend a lot to get worthwhile performance.

PCFormatVerdict

- Cheapest ATI DirectX 9 card
- Not a great performer even at this price

"The SE chips are misleading in their high number promise."

64%

MOTOROLA MPX200

£0 (Orange monthly contract) Motorola

Small, versatile and all you pay is your soul to Microsoft.

Mobile phones that access the internet and synchronise with your PC are nothing new. Nor is the technology that powers them: Windows CE, Symbian, Epoc – they're not exactly revolutionary operating systems. What is different about Motorola's first smartphone, though, is that it manages to conform to the golden rule of mobile phone design: the best things to be carried in a pocket really do come in small packages.

The MPx200 is marginally larger than Motorola's other recent clamshell designs, but much more compact than other smartphones. The glossy finish is created for optimum smearing at the touch of a greasy digit, but is scratch-resilient and looks infinitely better than the grey SPV bricks that have boasted the smartphone interface.

It's bereft of a built-in camera and Bluetooth networking, but there's little else the phone won't offer. Orange offers a bespoke backup service via GPRS for all your contacts, but since it uses the PDA-friendly ActiveSynch to download everything you could possibly need on the move from Outlook, it's unlikely you'll need this. MSN Messenger on the move is something of a gimmick, we admit, but much more useful is the SD card slot which lets the phone double up as a picture viewer, portable movie screen or MP3 player. And best of all – in our eyes at least – you can even play *Quake* on it.

Our only criticism is that battery life is less than you'd expect from a mobile phone, and that means letting Microsoft into yet another small portion of your life. But since Orange is currently offering the MPx200 for free, that's a price we're willing to pay. **Adam Oxford**

→Detail

Operating system Microsoft Windows Smartphone 2002
Processor Texas Instruments OMAP710 ARM
Internal memory 32Mb RAM/32Mb ROM
Memory card SD (up to 1Gb)
LCD resolution 176 x 220 pixels, 65,536 colour
External 96 x 32 pixels
Phone connection Triband/GPRS/WAP
External ports USB
Bundle Outlook 2003, hands-free kit, charger, USB cable, 16Mb SD card with Orange apps
Web www.orange.co.uk
Phone 0500 802080

PCFormatVerdict

Powerful, highly customisable, very small and free

No Bluetooth or camera, poor battery life on our test model

"Unfortunately held back by shoddy battery life, but otherwise this really is a fantastic phone."

77%

PORTÉGÉ M200 TABLET PC

april 2004 silver PCFormat

£1,879 Toshiba

It might be a tablet, but hold a chisel to it at your peril.

Everyone sing together, "Tablet PC killed the smart display, ahhh..." It's not musical but it sure is the truth. Microsoft's ill-fated and over-priced smart display is dead and buried, and we're happy to skip and dance merrily on its grave while using an infinitely more flexible Tablet PC. And what a great tablet it is, too. Just a little over a year on from the original launch, this latest Toshiba portable can be thought of as Son of Tablet. It has second generation written all over it, from the high-res, pin sharp 1,400 x 1,050 display to the 60Gb hard drive and the GeForce FX Go 5200, while at its heart the 1.6GHz Pentium-M enables you to web browse and play *Halo* with almost the best the laptop world has to offer.

Frankly, Toshiba can't lose because it's using the so-called clamshell design. Using a cleverly engineered tilt and pivot gizmo, something even the finest Scrapheap challenger would struggle to match, the tablet is just as happy being used as a normal laptop as it is in tablet mode, a quick clunk-click later. You'd swear it should be a point of failure, but Toshiba doesn't think so and our clumsy efforts to break it came to naught. As for wireless connections, we don't know where to start – 802.11b, Bluetooth and infrared are all onboard as standard.

While the 1.6GHz processor helps power out a MobileMark of 119, a measly 256Mb of memory overall holds the system back. And a running time of three hours and 40 minutes isn't going to keep you entertained for much of the day. Despite our criticism, it's still easily the best tablet on the market, but at nearly two grand, so it should be. **Neil Mohr**

→Detail

CPU Pentium M 1.6GHz
Memory 256Mb DDR RAM
Screen 12.1-inch LCD (1,400 x 1,050)
Video 32Mb nVIDIA GeForce FX Go 5200
Drives 60Gb 5,400rpm hard drive, USB 2.0 DVD/CDRW combo drive
Comms 56kbps v.90 modem, 10/100mbps LAN, 802.11b Wi-Fi, Bluetooth
Extras 2x USB 2.0, 1x SD slot, 1x PC slot
Software Windows XP Tablet Edition, Microsoft OneNote
Dimensions 295 x 250 x 33mm
Weight 2.0kg
Web www.toshiba.co.uk
Phone 0870 444 8944

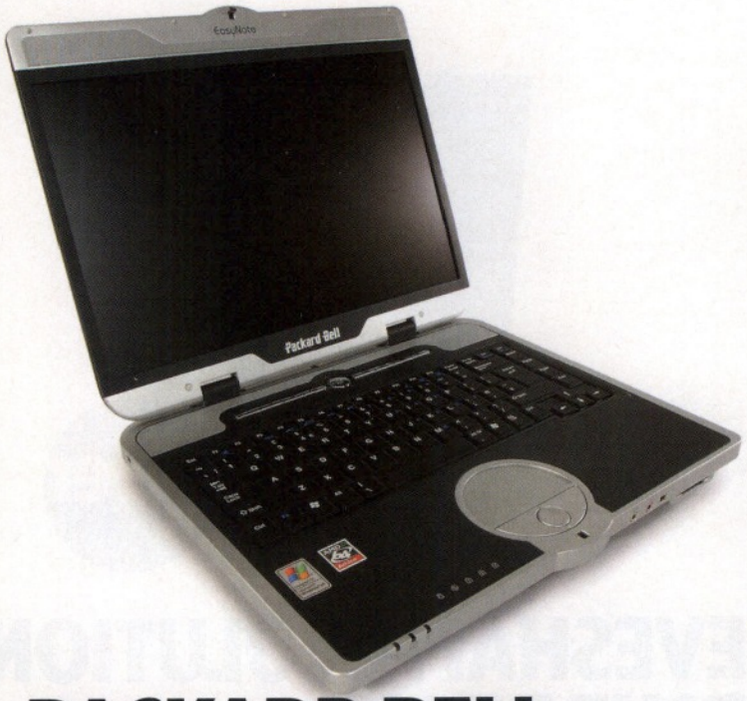
PCFormatVerdict

Cleverly versatile design and a lovely high-res display

Toshiba, you cheapskate, why only 256Mb of memory?

"Simply the best tablet on the market: thanks Toshiba. Versatile, powerful and fully loaded."

80%



PACKARD BELL EASYNOTE M

£1,799 Packard Bell

The sixties are back, but conspicuously failing to swing.

Unless you've been hiding under a Slot II Pentium for the last six months, you'll have heard some of the hype about the new AMD 64-bit processor – transforms computing, rescues kittens, prevents dandruff, that sort of thing. Round here this results in one millimetre less of upward eyebrow movement for every use of the word 'revolutionary', but somebody at Packard Bell can't have been so picky because it looks as though they've decided that the CPU is quite enough to mask the mediocrity of the rest of the system.

There's nothing wrong with the brainy bits. That Athlon AMD64 3200+ comes with 512Mb of RAM, which ticks along at a pleasing speed and notches up a respectable 166 in *MobileMark2002*. A 60Gb hard drive is well worth having, as is a 15.4-inch widescreen display, and six USB 2.0 ports is generous by anybody's standards. DVD-RW is still a rare 'un, too. However, an initially promising stab at desktop replacement is spoiled by the presence of a weedy 64Mb ATi 9000, which falls some way short of decent gaming performance. The stodginess is made worse by the screen, which adds slug-like response times to an unexciting 1,280 x 1,024 maximum resolution. DVD viewing fares slightly better, but irritates thanks to a pathetically low speaker volume. Even day-to-day use manages to underwhelm, with the baffling absence of parallel or infrared ports and a nasty, cheap-feeling keyboard and ugly slate grey design. Most infuriatingly, the whining, fan-cooled charger is seemingly powered by hamsters, taking an age to top up the miserable three hours of battery life.

Jon Hicks

→Detail

CPU AMD64 3200+
RAM 512Mb
Hard disk 60Gb
Graphics 64Mb ATi Mobility Radeon 9000
Screen 15.4-inch widescreen, 1,280 x 1,024
CD/DVD DVD/DVD-RW
Connectivity 1 x Type II PCMCIA, 1 x FireWire, 6x USB 2.0, 802.11b
OS Windows XP Home
Warranty One-year standard
Dimensions 352 x 285 x 45mm
Weight 3.8kg
MobileMark2002 160
3DMark2001 SE 3,220
3DMark2003 564
Battery life 184 minutes
Web www.packardbell.co.uk
Phone 0870 112 2334

PCFormatVerdict

- 64-bit processor, big software bundle, lots of USB 2.0 ports
- Crappy build, dud graphics, poor battery life, ugly and expensive

"Disappointing. A worthy brain in a worthless body, and at a whopping price to boot. Next!"

59%

VT BOOK

£195 Village Tronic www.villagetronic.com

Ever felt an insatiable desire to create the largest Internet Explorer window in Christendom? Well, hanker no longer. With this notebook PC card you'll be fashioning phat fenestra to your heart's content. Packed into the VT Book's credit card-sized dimensions is a Trident video chipset complete with 32Mb of DDR VRAM. OK, it's essentially a 2D-only chipset but that's not the point. The point is that it gives notebook users a genuine DVI port along with the perfect digital signal that videophiles and graphics pros demand. In combination with the VGA port that most laptops offer, it also allows a triple screen setup that puts the wide into widescreen and desktop PCs to shame. Which is nice.

PCFormatVerdict

- Provides a proper, digital DVI port
- Limited compatibility and immature drivers

"A costly but welcome addition to the road warrior's armoury."

79%

TRAVEL POWER ADAPTOR

£83.99 APC www.apc.com

Thanks to the hectic lifestyle we lead here on *PCFormat* we've been crying out for a total power solution that allows us to watch movies – sorry, keep filing large quantities of copy – in foreign climes, in cars and in squats. So we were delighted to be offered the chance to sample this apparently total travel power solution. You can imagine, then, the McEnroe-style tantrum that kicked off when we discovered – at 35,000 feet, no less – that the Dell notebook we were using was not supported. And let's not forget Dell is the biggest PC manufacturer on the planet. Unforgivable? We think so. The fact that the adaptor failed to charge our cloned Asus Centrino notebook is also a worry.

PCFormatVerdict

- Works as advertised if it's supported
- Nowhere near universal compatibility

"Check your notebook or PDA is supported before you buy."

65%

PACKARD BELL IEXTREME DUO

£1,199 Packard Bell

Sigh...another Mac-alike. Pseudo style over substance?

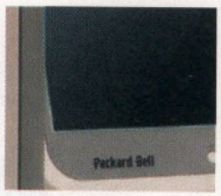
We usually shun the speccy types from our sister title *MacFormat* – they're stuck in a cold corner of the office and are only let into the kitchen at certain times – but they managed to escape and get a gander at this PC. One tapped the side, which rattled with an unconvincing tinny sound. Another pulled at the bottom drive door that disguises the floppy drive. And, with a bit of twisting, they pulled it clear, whooping with glee. They then poked around the rest of the unit like monkeys crawling over the cars at a wildlife park. Bits came off here and there as we watched in horror. But they've got one thing right: the build quality is awful. It's plasticky. And bits rattle when you touch them.

The design, while attempting to be Mac-like, only manages the cheapest kind of rip-off. Take a machine such as the G5 or even the iMac – unless you're going to make a decent fist at copying the style, why even try?

Under the hood, however, it's a different story. We're hardly talking great performance – a 3DMark 03 rating of 664 is all it can muster – but it has a decent helping of RAM and considerable hard drive capacity. It also features something called the Duo. This is an external USB-connected separate unit. It contains a six-in-one-card reader, two USB ports and a CD drive. It's designed so you can have it on your desk next to your display, while the main unit sits beside your feet.

But there are much better packages available for the money, and we reckon it'll be mostly consumed by those who have to get a PC that conforms with a certain appearance. Yawn. Packard Bell used to sponsor Leeds United, too. Just about says it all really.

Dan Grabham



→Detail

CPU Intel Pentium 4 3.06GHz HT
Hard disk 160Gb 7,200rpm
RAM 512Mb DDR
Drives DVD+RW, other in Duo
Graphics ATI Radeon 9200 SE 128Mb
Monitor 15-inch TFT
Front ports 2x USB 1.0
Back ports 2x USB 2.0, Ethernet
Operating system Windows XP Home Edition
Extras Duo box (DVD, six-in-one card reader, 2x USB 2.0), keyboard, speakers, mouse, Microsoft Works, software bundle
Sysmark Does not run
3DMark 03 664
Web www.packardbell.co.uk
Phone 0870 112 2334

PCFormatVerdict

Reasonable specification, Duo not a bad idea

Awful build quality, quite expensive really

"They still don't get it, these PC makers. As Apple itself tends to say, think different. Please."

52%

EVESHAM EVOLUTION BLUE BEAST

£1,173 Evesham

Why ruin a PC with cheap-looking styling? Ask Evesham.

When you are picked, eager and naïve, to write for the Gods that are *PCFormat*, you're given a sheet of words to avoid. 'Beast' is one of these blacklisted words. Equally, we should shun the appearance of this, er, Evolution. Evesham makes very good PCs. Shame they're so bloody ugly, though. (We were going to use 'sodding' in that sentence, but that's banned, too, damnit.) So anyway, they've moved on from beige, to black, and stuck a blue plastic swirly thing on the front. Hmmmm... It's not that it looks especially bad, it just seems as half-baked an idea as those sodd...bleedin' dough balls at Pizza Express. (*Tasty dough balls – Ed.*)

Anyway, on to the nitty-gritty. The Hyper-Threaded P4 system, with a score in 3DMark 03 of 5,288, is complemented by a top-notch range of components and, overall, we are impressed by this PC. True, it doesn't represent as good a value score as the SSC Carrera we looked at last month, but it does comes with some great extras such as the 17-inch ViewSonic display and Creative Inspire 5.1 surround speakers. The gamers amongst us will be happy, won't we?

The Evolution's extra moniker comes courtesy of the rather unfortunately grotesque blue plastic that appears on the front, as well as an assortment of blue lights which shine from the front of the case. But it's just not enough. OK, it's an overworked point to say that Apple makes some lovely-looking kit. But, when one of the biggest computer manufacturers' attempt at successfully making a cool-looking PC results in, well, in this thing, what hope is there for those of us who like our PCs to look just a little bit different? That's why you shouldn't build your own.

Dan Grabham

→Detail

CPU Intel Pentium 4 3GHz 512Kb cache 800MHz FSB
Motherboard MSI i865PE ATX Intel 10/100 LAN, S-ATA
Hard disk Maxtor Calypso 120Gb 7,200rpm 8Mb cache
RAM 512Mb DDR DIMM PC3200
Drives Sony DVD 16X, Sony DW-U14A DVD Multi
Graphics nVIDIA GeForce FX 5900XT 128Mb
Monitor ViewSonic VP171S 17-inch TFT 16ms
Sound C-Media Sound Blaster compatible 6-channel audio, Creative Labs P580 Inspire 5.1
Operating system Windows XP Home Edition
Extras Hayes modem, Trust keyboard
Sysmark Does not run
3DMark 03 5288
Web www.evesham.com
Phone 08707 299 785

PCFormatVerdict

Well-endowed for the price, decent performance

Why, oh why is it so very hideous?

"A solid performer with an ugly streak and a beautiful display. Worthy of some consideration."

81%

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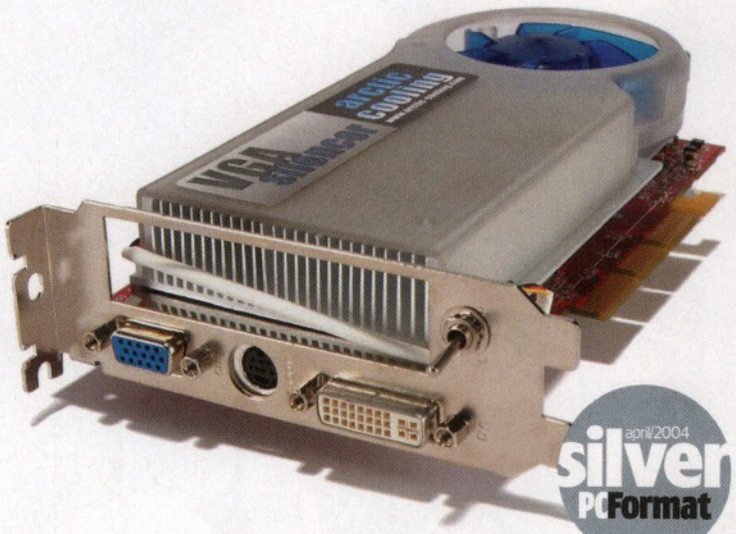


AOPEN H600B

$145 (£78) Aopen www.aopen.com

Aopen is a conservative tailor when it comes to cases, with colours ranging from beige to grey. With a 350W power supply and a spacious internal design, the H600B offers the not unusual option of four 5.25-inch and two external 3.5-inch drive bays, as well as an optional 3.5-inch internal mounting bracket for hard drives. The design of the H600B is of a fairly standard nature, albeit not as attractive as some cases at this price point. The steel chassis means it is rather heavy, though, and doesn't have the natural cooling abilities of an aluminium version, but with five internal fan mounts and one supplied fan, you can add cooling if needs be.

PCFormat Verdict

- Solid case with many features and PSU
- Heavy, not the best looking case around

"A good entry-level case with plenty of internal options." **70%**

VGA SILENCER

$22 (about £12) Arctic Cooling

When you only want vision, not sound.

The problem with the majority of high-end graphics cards, aside from the hefty price tag, is that they get themselves rather hot under the collar. A few years ago, manufacturers were still releasing cards without onboard cooling systems or even just heatsinks akin to your standard Northbridge cooler, as found on the most recent motherboards. Even now, with their ever-increasing CPU clockspeeds, the current crop of cards leaves a lot to be desired when it comes to cooling.

We've seen a few manufacturers over the last year releasing models with truly passive heatsinks, and others have maintained variations on the reference board coolers, but these are usually noisy and don't stop overheating problems when it comes to overclocking. The VGA Silencer wants to solve all these problems.

It's not doing a bad job of keeping our Radeon 9800 Pro nice and cool, even with the optional fan turned off. The main problem, however, is that a lot of people buy Radeons for their standard one-slot design, as opposed to the larger two-slot design that comes with the majority of nVIDIA's cards. If you can live with the fact that this takes up the space of an extra slot on your case and motherboard, then the simplistic installation and excellent performance should not be missed.

The mounted fan offers a greater level of cooling if you're serious about overclocking, while remaining quieter than most stock heatsinks. But to be honest, there should be no worries about running the cooler as a totally passive heatsink. We presume that this would be the preferred option for most people because it does offer complete noise reduction. **Andy McGregor**

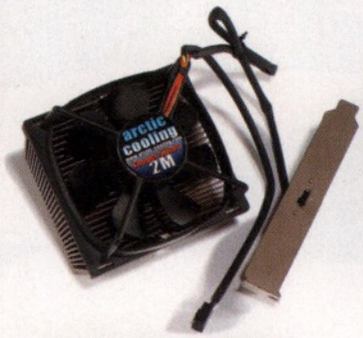
→Detail

Suitable for 9xxx series Radeons, GeForce 3, 4 and FX graphics cards
Features Rear-mounted fan switch for silent mode
Web www.arctic-cooling.com

PCFormat Verdict

- Easy installation and good value for money
- Takes up an extra slot in your machine

"The VGA Silencer offers a totally silent cooling solution with backup fan if needed." **80%**



COPPER SILENT 2M

$22 (£12) Arctic Cooling
www.arctic-cooling.com

Recommended for use on Athlon XPs up to 3400 rating, we tried this CPU cooler on our 2500 Barton, clocked to 2.2GHz. We're glad we did as the average temperature over 24 hours was maintained at 48°C. The copper plate has a large surface area, which helps spread heat out over the die efficiently. The fan is quiet and its speed adjustable. This pleasant cooling system should last well into the next series of Athlon XPs.

PCFormat Verdict

- Good noise reduction and cooling
- Large and rather fiddly to install

"A pleasing CPU cooler that does exactly what it says on the tin." **73%**

SYSTEM AIR EXTRACTOR

$8 (£4) Akasa
www.akasa.com.tw

When testing some products, you're left wondering why they exist. The System Air Extractor takes hot air from inside your PC and throws it out the back. This rear-mounted device expels air at a relatively fast rate, but with the high expulsion comes a high level of noise, far greater than any fan which does a similar job. It's the noise that bangs the final nail into this device's coffin. In its favour, installation is a doddle.

PCFormat Verdict

- Takes away some of that nasty hot air
- Not the most useful of devices

"A cheap yet not very cheerful noisy air extractor." **45%**

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- PC Gamer UK, September 2003

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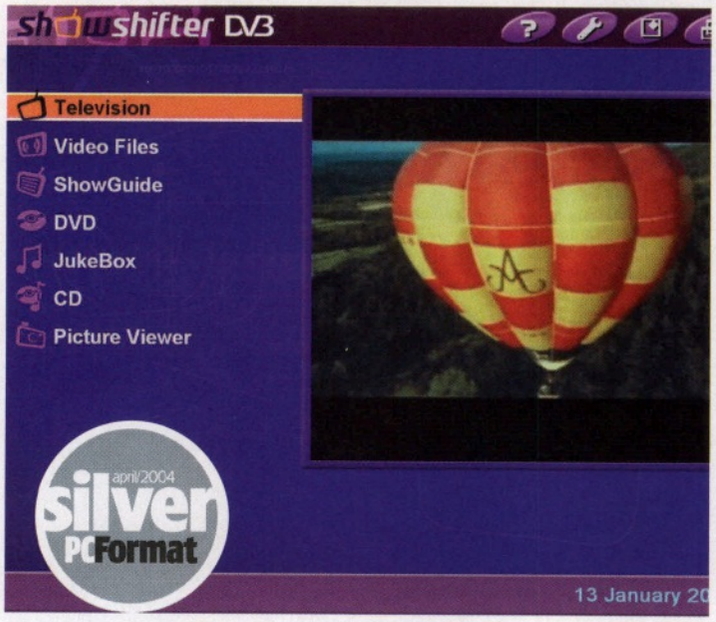


SHOWSHIFTER DVB

$75.00 (approx £41) Home Media Networks

The sensible alternative to Windows XP Media Center, offers PVR from 25 free digital TV feeds.

Exact figures are hard to come by but we'd make an educated guess that *Showshifter* is one of, if not the, most popular third-party TV applications on the net. It works with any TV card and gives you a set-top box style interface most reminiscent of Media Center itself. It's almost essential if the software that came with your TV card doesn't include PVR (personal video recorder) for pausing and resuming live TV feeds.

The latest version, *Showshifter DVB*, takes this a step further by supporting most digital television cards. If you're thinking of setting up a PC to replace your video recorder, DVD player and stereo, a digital TV card is pretty much a mandatory accessory. The selection of Freeview channels shows terrestrial TV to be pretty archaic.

Forty quid is a fair bit, though, considering all of the TV cards supported by *Showshifter* already come bundled with applications that offer PVR and a software tuner. It is significantly better, though, than the standard Hauppauge offering because the same interface handles digital radio, DVD playback and movie file playback. It also beats ATI's *Multimedia Centre* with its simplicity.

It's not without flaws, mind. Support for RF remote controls is included but, bafflingly, in order to set up custom buttons, you need to manually change values in the Windows Registry. Even more inexplicably, it's quicker to switch out of full screen mode to select a channel from the menu, than it is to use channel buttons on a remote. And there's no support for Teletext. This is countered, though, by the fact that it seamlessly integrates modules from web-based channel guides to offer TiVo/Sky Plus style automation in what it records. **Adam Oxford**

→Detail

Features Pause live TV, digital video recorder, electronic program guide, home network compatible, digital picture viewer
Needs 800MHz CPU, 64Mb, Windows Media Player 7.1, DirectX 9, digital TV card
Web www.showshifter.com
Phone N/A

PCFormatVerdict

PVR over Freeview channels/ music management, AVI and picture files too

Expensive if you have all this in separate applications already

"Perfect for a living room media server PC, it decoded channels our TV card's software couldn't find."

83%

POWERDIRECTOR 3

£72.00 Cyberlink

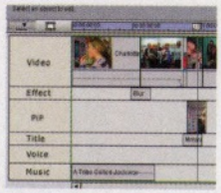
Showing the relatives your holiday clips need never cause boredom-induced comas again.

Your house is on fire. You can save one non-living thing. What? Ask this in the pub and you eventually find most people's prized possession is a photo album or home video collection (although you'll learn a bit about those who say "my croc skin codpiece").

Photo-editing software helps trim away unwanted interlopers to ensure that albums contain only the best untainted memories. But what about video footage? As cameras get better at taking movies, it's not long before you yearn to remove those slurred commentaries you uttered as you filmed your mate falling over in the road, or put together the best moments of the night out to the soundtrack of your choice. Until recently, you'd need a beefy PC to consider home video editing, but with *PowerDirector* on, you can do a Spielberg.

The welcoming interface is easy to acclimatise to, with an option of viewing a timeline or storyboard of your selected files. Images and video can be dropped into the mix along with music or your own director's commentary by just turning on a microphone. The Picture-in-Picture feature even allows one video to play overlaid on another, in order to get the full *Blind Date* effect.

Scene detection splits larger video clips into manageable chunks and there is a cornucopia of different transitions, effects and 57 text titles to play with to get that professional feel. When you're done, click speedily through the wizard to produce your own DVD or VCD, or spend time tweaking to the encoding quality you want. DV camcorder content can be put straight to DVD, although encoding it can take longer than other DV editing software on the market. **Jeremy Smith**



→Detail

Features Captures from DV/Micro MV camcorders, PC tuners or any video capture card; produces movies to MPEG-1, MPEG-2, WMV, RealVideo, QuickTime, DivX or AVI; 50 animated title effects; over 100 transition effects
Needs 450MHz CPU, 128Mb, PCI or USB 1.0/2.0 capture device compliant with WDM standard
Web www.gocyberlink.com
Phone N/A

PCFormatVerdict

Excellent interface, good encoding times (especially with faster systems)

Too slow on DV encoding and tape output

"Excellent entry-level video editing which enables you to create good-looking video quickly and easily."

85%

POWERCINEMA 3

£27 Cyberlink www.gocyberlink.com

Along with the standard home PC's promotion from bedroom/study to lounge comes media management software such as PowerCinema. A well laid-out, easy to navigate program, it comes with one remote control to replace the burgeoning coffee-table pile. Music, video and photo albums can be operated from one central point. There are no quibbles with the serviceable video playback, which supports most file formats. Pictures can be displayed in slideshows with basic transition effects and background music or narration. PowerCinema is not flexible enough to cope with creating slideshows or playlists from multiple folders/albums, nor are there handy pagedown-type scrollbars for larger collections, making it arduous to access your ZZTop collection.

PCFormat Verdict

Reliable. Remote control is a handy addition

No TV features/ playlist creation. Basic navigation

"Would benefit from TV playback/recording and easier navigation." **68%**

AXELAB AUDIO CD GENERATOR

£25 Phoenix Software www.phoenixsoftwareuk.co.uk

Here's the problem: there's nothing missing. *Axelab Audio CD Generator* is capable of ripping your music from disc, or exporting it back on to one. It can convert between *WAV, MP3, WMA* and *OGG format*, all within a smooth interface. It's just these programs are 10 a penny, especially now that *iTunes* and *Winamp* have got into the game, making it hard to justify the cost.

PCFormat Verdict

Very easy to use, well designed converter

Hard to justify paying such a premium

"A decent choice if you don't have similar, but no key features." **70%**

BEFORE YOU KNOW IT

£40 Transparent Language www.transparent.com

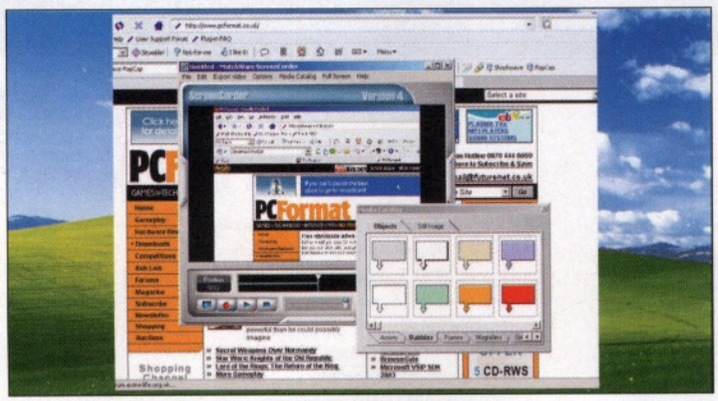
Looking for a new language? *Before You Know It* is not a traditional language course per se, but rather a set of virtual flashcards containing key phrases in Spanish, French, Italian and German. Each gives the opportunity to hear the phrase spoken, then tests your vocab by voice recognition or typing in the right translations. Excellent for basic vocab, but not a full linguistics course.

PCFormat Verdict

A fast, easy way to learn the basics

Very superficial lessons beyond mere phrases

"Ideal for holidays, but not the best direct tutor on the market." **80%**



SCREENCORDER 4

£149 MatchWare www.matchware.net

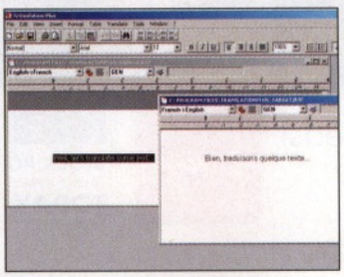
Need to show someone how to use a piece of software? Looking to record a demo, or compile a more dynamic project than *PowerPoint* can offer? *ScreenCorder 4* is an excellent way to do so, involving no more effort than clicking on a record button and using your computer as normal. Every click and mouse movement is recorded, every bleep and bloop saved for posterity, and output as either a straight AVI file, *Microsoft's WMV* format or *Macromedia Flash*. There aren't many editing features on offer if you want to do anything more advanced than slicing the start or end of your presentation, but you can add detail, such as floating balloons, magnifying glasses and straight image files.

PCFormat Verdict

Brilliantly easy. Superimposition tools are great

Limited editing functions available

"Niche function, but capable of handling any PC-based tutorials." **78%**



TRANSLATION PLUS

£50 Phoenix Software www.phoenixsoftwareuk.co.uk

Bien, traduisons quelques texte, as we're told they say in France. *Translation Plus* is like Babelfish, except that it is standalone software. not a website. As with all automatic translation programs, you can't expect miracles, but *Translation Plus* will certainly have a valiant stab at extracting the English from the incomprehensible.

PCFormat Verdict

Wide range of languages, and fast operation

Effectively the same as free online services

"Best deployed when pulling key info rather than converting it." **76%**

PROJECT DOGWAFFLE 2

$67 Dan Ritchie www.thebest3d.com

A crazy name but an excellent package. *Dogwaffle* specialises in natural media painting, splashing down everything from watercolours to fur with a quick drag of the mouse. While this version is far pricier than its predecessor, it comes with essential new tools, such as support for layers, paint blending and a media manager to keep track of your settings.

PCFormat Verdict

Powerful and very, very affordable

Unique interface that takes some getting used to

"A superb art package, certainly worth slipping into your painting kit." **91%**

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- 10/100 network connection (on-board)
- v92 56k Internet ready modem
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"Great looking system...

...with excellent LCD panel and DVD writer"

Computer Shopper, Sep 2003

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October 2003

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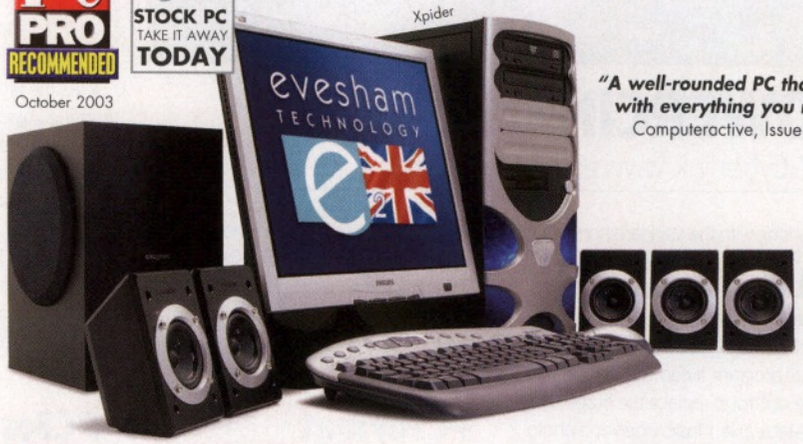

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Computeractive, Issue 142

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- NEW Sony latest model DW-U18A 8-speed Multi Format DVD writer
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- v92 56k Internet ready modem
- Sound Blaster compatible 6 channel audio
- Creative Inspire P580 5.1 speakers
- Internet keyboard with rechargeable wireless optical mouse
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- FREE Microsoft Works 7.0
- Stylish tool free case - Xpider or Sleek design (435x222x495mm)
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- 3 year warranty (2 years on-site, 1 year RTB)

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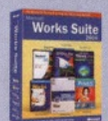

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- 16x DVD-ROM drive
- CD-RW drive (52x24x52) with BURN-proof technology
- v92 56k Internet ready modem
- Sound Blaster compatible 6 channel audio
- Creative Inspire P580 5.1 speakers
- Microsoft keyboard and optical wheel mouse (black)
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Evesham Technology recommends Microsoft® Windows® XP

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Brand of the Year 2003

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- Firewire port (IEEE-1394)
- 10/100 network connection (on-board)
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PC Pro, Recommended & A-List, February 2004

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VOYAGER 64 3200+ A-List

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- 10/100 network card
- v90 56k Internet ready modem
- Built-in Sound Blaster Pro compatible audio & speakers
- FREE Pinnacle Instant CD/DVD SE, Studio8 SE & DVD player
- FREE Microsoft® Works 7.0
- Ports - 4x USB2.0, Firewire, Parallel, VGA, PCMCIA Type II x 1
- Weight - 3.6kg
- Dimensions - 332mmx285mmx41.1mm
- 3 year warranty - 1 year on-site, 2 years RTB

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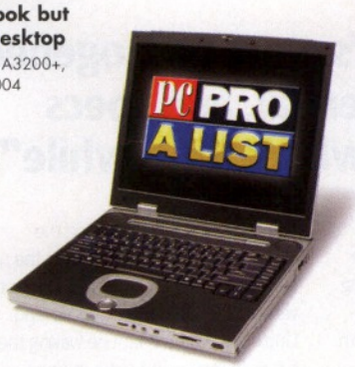

"A formidable package." Voyager 64 A3200+, Trusted Reviews, Dec 2003

"Great value for money." Voyager 64 A3200+, PC Advisor, March 2004

"Good performance..."

What Laptop, June 2003

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- FREE Microsoft Works 7.0
- Ports - up to 4xUSB2.0, Firewire, IrDA, VGA, PCMCIA 1xType II
- Weight - 3.8kg
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"Excellent graphics... An all-round powerful machine."
What Laptop, June 2003

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PDAs

Do handhelds still have a place in our ever-demanding future? **Jon Hicks** champions the Underdog.

PDAs have always had a slightly rough time of it. It's not their fault; being defined by Apple at the launch of that legendary misfire the Apple Newton, was never going to be the best start in life. Since then they've always had a reputation as being a bit of a fiddle and not nearly as helpful as you'd think – nothing has yet replaced the hastily-scribbled sticky note for rapid data storage, and while we've always dabbled in PDA-dom, it's often easier to let the things fade away under the contents of our desk drawer, than it is to trust iffy text recognition and data that disappears when the battery snuffs it.

However, in our new permanently-connected world, with wireless networks built into crockery and text messages being piped through the fridge, the idea of trucking around your own technology centre is looking much more appealing, and it's matched by some remarkable leaps in portable technology – the sheer potential of the modern PDA is staggering. Yes, there are still the cut-down old stagers that offer little more than memo, calendar and calculator features, but the top end is fizzing with multimedia marvels boasting the sort of specification that would have been sitting on a desktop barely three years ago. We've included a few of the more basic ones here in the interests of providing some context, but it's the heavy hitters that provide most of the interest – with integrated wireless access both to the internet and your desktop PC, and processor and display power that blows handheld games consoles out of the water, they're an increasingly interesting alternative to the still-cumbersome notebook.

Mobile zone

The bottom end, by contrast, is being munched away by the rapacious growth of the mobile phone – they've already sewn up your contacts list, and with the steady rise of the smartphone making a grab for calendar, memo and note-taking functions, it's looking increasingly unnecessary to load up your pockets with two devices at once. However, the mobile's position as a fashion accessory holds it back in this regard – the style police have proved strangely unwilling to proclaim that huge 'n' clunky is the new black, so there's still a strong argument for relegating your digital organisation to something svelte, silver and stylus-equipped, and letting the ubiquitous infrared or Bluetooth connection shuttle them over as needed. As for the higher-end stuff, we really can't see the future of communication as squinting into inch-high screens, no matter how many polyphonic ringtones lurk within.

The fundamental question remains: which operating system you go for. Microsoft's increasingly schizophrenic offering – it's called Windows Mobile 2003 as we write, but it could be anything by the time you read this – is very slowly gaining favour thanks to its instant compatibility with the rest of Bill's corporate empire, so you can start swapping documents around the moment you plug it in. However, the more elegant charms of Palm's OS, currently at version 5.2.1, still hold the sales lead. Linux fans will no doubt be waving their hands in the air about the various attempts to bring the penguin to the PDA, but Sharp is the only mainstream manufacturer to adopt it, and it isn't admitting to selling it in the UK.

"The PDA market's more homogeneous than a Gap commercial, and specs haven't gone anywhere for a while"

Soft options

Gadget freaks that we are, we're more tempted by the Windows version – although sluggish, the compatibility issue means that there is lots of software floating around for it, and adding multimedia content presents much less of a challenge. Tons of games are available too – although the rapacious system requirements slow even the mightiest of specification.

Palm's power, by contrast, remains in its simplicity – the basic OS is push-button simple with a learning curve that's flatter than Holland. It's a skinny thing, too, at least at the lower levels, so it moves at a fair lick even on the most sluggish specification and remains the firm favourite for the budget buyer. Even the most bare-bones Pocket PC comes in over the £200 mark, whereas Palm-powered entry-level models will set you back less than the price of a mid-range graphics card . However, the top end is on the grow, particularly thanks to the crown prince of consumer technology, Sony, so the lovers of silver trim and blue lights can make their own choice.

Whatever you choose to splash your cash on, you're spared the fretting over megahertz and processor cycles that so spoils the desktop market – the PDA market is more homogeneous than a Gap commercial, and specifications haven't gone anywhere for a while. Bearing this in mind, you don't have to worry too much about obsolescence – whatever you pick will cope with all the contemporary applications, and with so much stuff being developed for the weedy modern mobile, the future looks pretty bright too.

THE PCFormat SUPERTEST

WHERE TO FIND WHAT, IN OUR PDA ROUND-UP...

p.104 Pocket PC PDAs
p.107 PDA accessories
p.108 Palm PDAs
p.110 Verdict and specs

HOW WE TESTED

The setting up of a miniature gymkhana, for our herd of handhelds to eagerly leap over.

» **Features** Always a simple one, this: how many bells and whistles does it have? Wi-Fi and Bluetooth rank highly, but we're also after infrared, desktop cradles, removable batteries and more.

» **Sound** A mono speaker is never going to shake the room, but decent audio isn't uncommon and there's invariably a headphone connection – we piped a few MP3s through and listened hard.

» **Video** 240 pixels is fine for pocket viewing – we ran a half-hour film clip through each device's player of choice and looked for quality, performance or indeed if it could hack it in the first place.

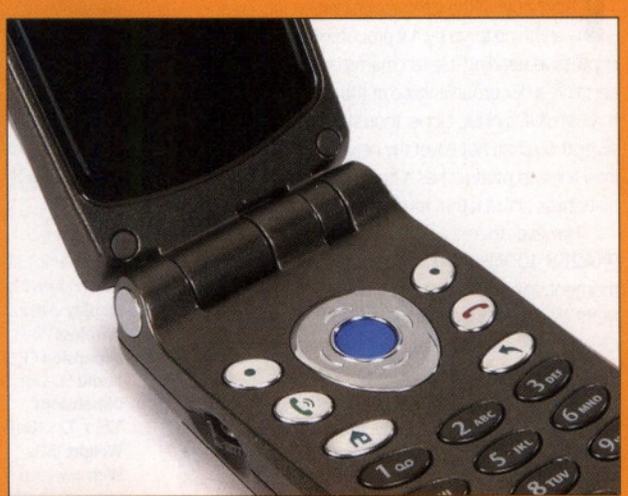
» **Games** There are plenty of games for Pocket PCs, but we went for an old stager: Tomb Raider. Herding Ms Croft past ancient evils tests both controls and graphics alike.

» **Performance** There's no standard benchmark across both platforms, so we just hit them with as many applications as we could find and waited for them to start chugging.

Four-inch punch

Are PDAs the ultimate mobile gaming platform?

Yes, you can play games on a mobile phone. Just. Trouble is, they're rubbish – ugly, fantastically difficult to control and about as much fun as picking glass shards out of your food. PDAs give a much gutsier hardware base and offer considerably more enjoyment, and being so close to desktop technology they're a little less stressful for the developers, too. The mobile gaming industry is now well established, with new releases appearing almost daily on sites such as **www.pocketgamer.org**. And while the current faves are 2D puzzles and platformers, proper 3D is almost upon us – graphics approaching the standard of the original Half-Life are coming from developers such as Xen Games (**www.xengames.com/gwnews.html**). Most exciting is the emulation scene – favourites include PocketSNES (**paqpark.nuclearfallout.net**), PocketGenesis (**www.pocketemulator.com**), and the FPSece PlayStation emulator (**http://fpsearm.psxfanatics.com**). Of course, you'll have to supply game ROMS yourself. Also of note is that both ATI and nVIDIA have caught on to the market, and are currently racing to develop graphics chips for both Palm and Pocket PC devices.



The future

The phones are ringing.

First, the good news: PDA sales are actually on the up at the moment. The bad news is that it's mostly due to companies bulk-buying for their employees, and those figures are dwarfed by the PDA's arch-nemesis: the smartphone. Modern mobiles are approaching personal organisation a lot quicker than PDAs managed voice communication, and things such as address book synching and Bluetooth connections are already very well established.

PDAs are still clinging to the technological lead, though. Even the latest smartphones are still hugely complicated (and, in Microsoft's case, dog slow), and trying to organise your life and play your movie downloads through a tiny screen and numeric keypad takes lots of time and an awful lot of pocket space. Our money is on PDAs abandoning the basic organisation functions to the mobile hordes and evolving into something with a tad more desktop-like power; such as the it'll-be-out-this-year-we-really-truly-promise Oqo (**www.oqo.com** for details).

april/2004 silver PCFormat

AJP MIO DIGIWALKER 558

£399 AJP

There's obviously a 10 Commandments of PDAs, although if the text recognition on this lot is anything to go by, it'll probably be under the less impressive heading 'Lle tan mammaudkuly.' There's certainly a discernable voice of the ancients ringing through AJP's Mitac clone: thou shalt be square and silver, thou shalt not covet thy neighbour's processor... The Intel finished product has a none-more-fundamentalist blandness about it that renders it unrecognisable.

However, there's a very good heart under there: the PXA263 400MHz CPU is the best PDA processor at the moment, although it has been paired with a stingy 64Mb ROM. We're overlooking this, however, because of both CF and SD slots, and integrated Wi-Fi and Bluetooth mean you don't have to plug them with wireless kit either. This spec is high enough to start nipping at the Toshiba E800's heels, and for a shade under £400 there aren't many competitors. Admittedly, the shortage of memory slows things down, but it certainly churns through every application we throw at it.

Outside of pure performance, it's less impressive: the component quality doesn't have the heft of more expensive offerings. The screen is an off-the-peg 3.5-inch job, so it's a poor performance in weak light. We have trouble with the twiddly pimple-like joystick, too, and the creaky construction isn't ideal. They aren't crippling problems, though, and they don't hold this back from the best performance-to-pound ratio.

→Detail

CPU 400MHz PXA263
RAM 64Mb
ROM 64Mb (32Mb flash)
OS Windows Mobile 2003
Display 240 x 320, 3.5-inch
Wireless Wi-Fi, Bluetooth
Expansion CF, SDIO
Audio Speaker, headphone
Dimensions
125 x 72 x 16mm
Weight 150g
Web www.ajp.co.uk
Phone 020 8208 9700

PCFormatVerdict

- ↗ Great price, fully wireless, and oodles of expansion
- ↙ Unremarkable looks, flaky d-pad, glum and gloomy screen

"Anonymous looks conceal a very solid performance and provides expansion galore."

86%

ASUS MYPAL A620

£360 Asus

Forgive us if we get effusive here, but it's important: we're in the presence of greatness. This humble Pocket PC has the enormous honour of holding the world record for the thinnest PDA with a CF slot. And to think our mother said we'd never amount to anything...

Sarcasm aside, we're struggling to find anything special about the MyPal. We'll happily admit to its lithe build, but it's still chunky compared to the SD-only crowd and the width is less impressive, with a standard 240 x 320 screen marooned within a thick, tacky yellow-tinted silver casing. This manages to turn the MyPal's weight from an advantage to a worry – it feels cheap and nasty.

It's something of an schizophrenic combination inside, too. The PXA255 processor's performance beats its superiors in this test. While the 64Mb of RAM and ROM give a decent amount of room, beefing it up will pose a problem – that sole CF slot is going to have to be plugged with a Wi-Fi card if you want proper wireless internet: Bluetooth and infrared are standard.

Entertainment performance is a similarly mixed bag, with a deeply unremarkable display but the loudest and best-quality sound, although the bass and treble adjustment shine more through headphones than the wheezy speaker. Remote control functionality isn't helped by the IR port being on the side, and while gaming benefits from the big, easily-thumbed d-pad, it suffers from no jog wheel and mic button – an odd mix. While a competent performer, it doesn't excel anywhere.

→Detail

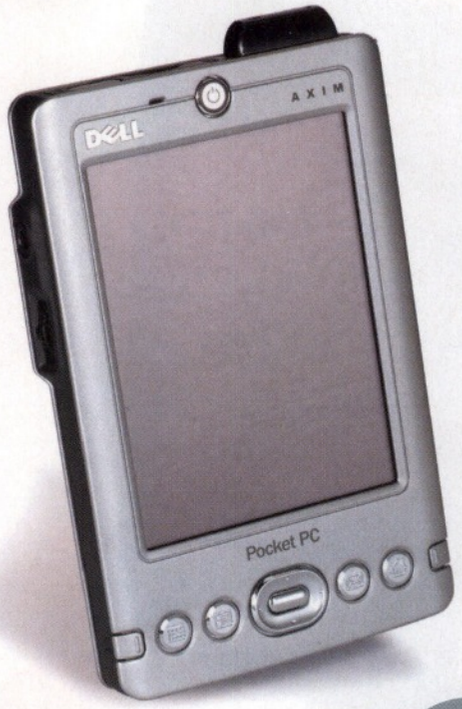
CPU Intel PXA255 400MHz
RAM 64Mb
ROM 64Mb (31Mb flash)
OS Windows Mobile 2003
Display 240 x 320, 3.5-inch
Wireless Bluetooth, infrared
Expansion CompactFlash
Audio Speaker, headphone
Dimensions
125 x 77 x 13mm
Weight 141g
Web http://uk.asus.com
Phone 0870 120 8340

PCFormatVerdict

- ↗ Rapid performance, handy d-pad, good sound quality
- ↙ Limited expansion, no Wi-Fi choice: no, none at all!

"Surprisingly speedy and conveniently lightweight. But it doesn't stand out from the crowd."

73%



DELL AXIM X3i

april/2004 silver PCFormat

£279 Dell

The battle has come right down to the line in the one criterion that really matters: who has the flashiest desktop cradle? The Toshiba comes in swinging with a circular black affair, its blue-lit bottom akin to a tragically modified Toyota, but Dell has nudged ahead with its glossy metallic-grey lump complete with blue-lit Dell logo. What's more, it can charge a spare removable battery as well. A triumphant victory, for sure.

What? Oh yeah, the PDA isn't too bad either, we suppose. It's certainly an improvement on the brick-sized X5 that preceded it, with dinkier dimensions, slick grey casing and built-in Wi-Fi, and the PXA263 processor munches through applications solidly enough. 64Mb of RAM is yawn-inducingly commonplace, although 64Mb ROM includes a larger than average flash storage of 38Mb. An SD card slot tops this up, but it's SDIO – so the short-range and slightly pointless wonders of Bluetooth are available with a simple upgrade.

We're less struck on the wireless implementation, which shuns the sleekness of competition by sticking an unsightly plastic lump on top. Switching it on results in a stupid flashing blue LED that makes the whole thing look terribly 80s, although the easily-thumbed wireless switch is a plus and helps keep the battery going. A further couple of bonus buttons also keep gaming performance painless, and the screen is pleasingly bright. This makes for a solid performer, but the big draw is price. Wi-Fi is rare at this level: equivalent iPAQs only have Bluetooth.

→Detail

CPU Intel XScale PXA263 400MHz
RAM 64Mb
ROM 64Mb (38Mb flash)
OS Windows Mobile 2003
Display 240 x 320, 3.5-inch
Wireless Wi-Fi, Bluetooth, infrared
Expansion SDIO
Audio Speaker, headphone
Dimensions 122 x 77 x 15mm
Weight 140g
Web www.dell.co.uk
Phone 0870 152 4636

PCFormatVerdict

Small, Wi-Fi, decent price and performance

Out of date looks that need serious style advice, no CF slot

"Solid performance at an attractive price – but, unfortunately that really is as exciting as this gets."

84%

FUJITSU SIEMENS POCKET LOOX 610

£470 Fujitsu

Aha. We see what they did there. Oh, those crazy marketing folk. Shame they didn't pay much attention to what they're supposed to be promoting, or they might have noticed that 'loox' are this device's weakest suit: it's absolutely massive, finished in shades of plastic-school-chair blue, and with a daft aerial stuck on one corner to complete the classlessness. You'd get looks if you had one, but not of the flattering variety.

For less superficial souls, there's little more to like. Although processing power is handled by the not-quite-top-ranked XScale 255, there's 400 whole megahertz on tap, along with 128Mb of system RAM and 64Mb ROM – a slightly stingy 28Mb is set aside for personal data. Further expansion can be had through the spare CF and SD slots, although weirdly, there's no SDIO so you can't add anything more extravagant. With Bluetooth and Wi-Fi already in place, this isn't a problem, just peculiar.

There's a touch of the Fortean about the performance, too, which is strangely sluggish for something so generously specified. Gaming performance is thus an odd mix between rapid load times and frustrating button-pushing, which is a shame because the rocking d-pad is an otherwise perfect controller, and the bonus buttons for the FSSpeedMenu shortcut utility come in handy. Movies and music fair better, but beyond that there's little to get very excited about – for a hefty business PDA it's decent enough, but it doesn't come close to the potential of the Toshiba.

→Detail

CPU 400MHz PXA255
RAM 128Mb
ROM 64Mb (28Mb flash)
OS Windows Mobile 2003
Display 240 x 320, 3.5-inch
Wireless Wi-Fi, infrared, Bluetooth
Expansion CompactFlash, SD
Audio Speaker, headphone
Dimensions 148 x 78 x 18mm
Weight 205g
Web www.fujitsu-siemens.co.uk
Phone 01344 475000

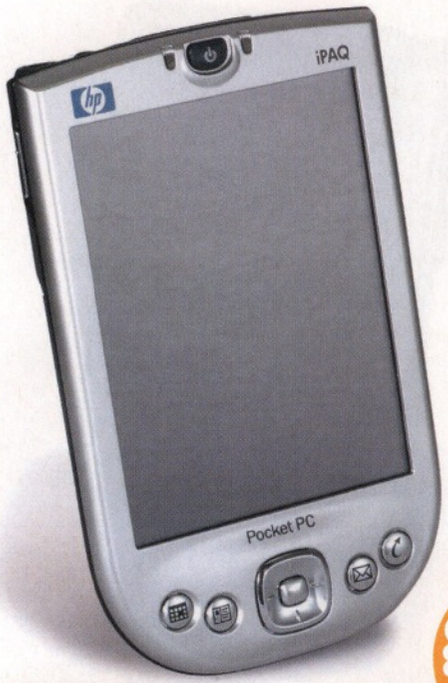
PCFormatVerdict

Good spec, all the relevant slots, nice d-pad

Too big, too slow a response, no SDIO

"Solid in every sense of the word, but it's just too much of a hefty lump to get the heart beats racing."

73%



april2003 gold PCFormat

HP IPAQ POCKET PC H4150

£399 HP

We complain enough about modern pop music being repetitive and endlessly uninspiring, but it's a positive hotbed of Darwinian evolution compared to the endless line of Xscale processors powering Pocket PCs. So why, then, is the iPAQ above stained with our lusting drool, despite being of the same mould – almost identical – as its bog-standard brother, the HP1940? The secret lies to the left of the power button – that'd be the Wi-Fi and Bluetooth, then.

The wireless double-whammy isn't rare among the PDAs we've seen, but it is a surprise on something this small. At only 70.6mm across, 13.5mm thick and 132g in weight, the 4150 looks and feels like a piece dropped off the titanic Toshiba, but it transmits your data with equal speed. Despite its size, the Wi-Fi connection works flawlessly, and for the business user there's a string of network-friendly secure log-on features to sooth system admins. Basic operation is great too, with that 400MHz processor and 64Mb RAM rattling through applications with no probs.

Tomb Raider performance isn't so rosy – controls are a bit fiddly, and while the frame rate is fine, the sound lags behind the action. There are no complaints when it does come into earshot, though, because it's clear and loud. The only application we can find it really failing at is remote control, which is ruined by the infrared port being on the bottom rather than the top or side. If you can live without that, this is damn near nirvana.

→Detail

CPU Intel PXA255 400MHz
RAM 64Mb
ROM 32Mb (2.8Mb permanent)
OS Windows Mobile 2003
Display 240 x 320, 3.5-inch
Wireless Wi-Fi, Bluetooth, infrared
Expansion SD
Audio Speaker, headphone
Dimensions 113.6 x 70.6 x 13.5mm
Weight 132g
Web www.hp.co.uk
Phone 0845 270 4222

PCFormatVerdict

Teeny tiny size, top quality screen, and totally wire-free

Let down by slightly duff games performance

"Portable power in every sense – seems like we're running out of new things to ask for (oh no we're not)."

92%

april2003 gold PCFormat

TOSHIBA E800 WI-FI

£485 Toshiba

One of the inherent problems with Pocket PC is that it's often used to describe something that's neither pocketable nor particularly PC-like – which is presumably why Microsoft has renamed its rather bloated OS the more comfortably catch-all Windows Mobile. However, this is the closest we've ever seen to proper power in a portable form.

True, the processor is just the same old 400MHz jobby that powers most of the premium portable massive, but it's partnered by 128Mb of RAM, 32Mb of ROM, and 32Mb of spiffing NAND ROM – that's 32Mb of files that won't vaporise when the battery runs out. Most impressive of all, there's a proper graphics chip – only 2Mb, mind, but it has an ATI logo on it and packs enough power to crank the resolution up to proper 480 x 640 VGA-standard, which on the 4-inch screen is the most impressive thing we've seen in an age. Sadly, you only get four file viewers that actually support this resolution, but a hasty hack from **http://home.comcast.net/~swdeveloper/ResFix1.zip** fixes this. Even the more conventional modes impress, storming every application, though gaming suffers from a cramped d-pad.

Other reasons to be cheerful include SD and CF slots, jog wheel and button lock, and there's prime posing potential with the glossy blue finish and blue-lit desk cradle. It's a shame about the unpleasant retractable stylus and choice of either Wi-Fi or Bluetooth – but this doesn't stop it being the most desirable Pocket PC yet.

→Detail

CPU Intel PXA263, 400MHz
RAM 128Mb
ROM 64Mb, 32Mb permanent
OS Windows Mobile 2003
Display 240 x 320 (640 x 480 max), 4-inch
Wireless Wi-Fi/Bluetooth option, infrared
Expansion CF, SD
Audio Microphone, speaker, headphone
Dimensions 77.0 x 135 x 16.7mm
Weight 198g
Web www.toshiba.co.uk
Phone 0870 444 8944

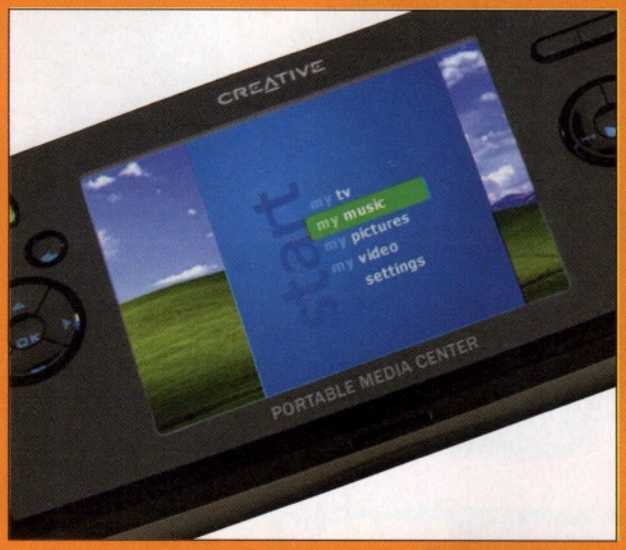
PCFormatVerdict

Graphical wonderment, truly excellent performance

Only one wireless connection, rather nasty stylus

"Storming performance and top connectivity – if it had Bluetooth too, we'd marry it."

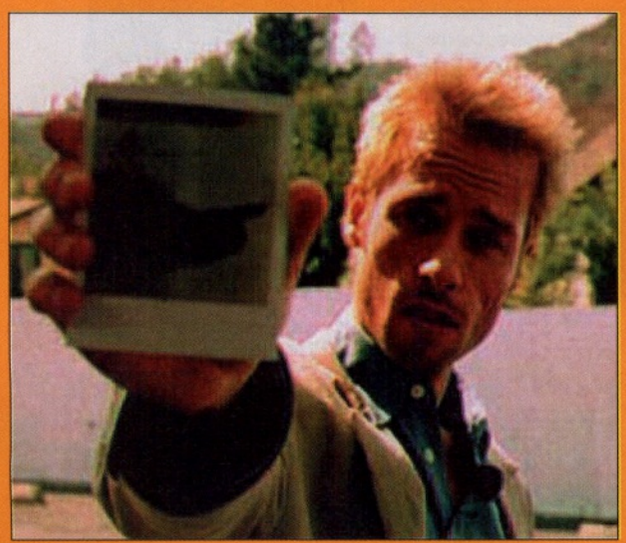
90%



Media 2 Go

Make your own mobile movie player.

As we'll report in more depth next issue, one of the technologies we're most excited about at the moment is Microsoft's Portable Media Centers – PDA-sized gizmos with a hard drive inside, capable of storing and playing back on their LCD screens, gigabytes worth of movie and music files. Unfortunately they're not due until much later in the year, but why wait? With a decent-sized memory card – or ideally a 4Gb Microdrive, which fits into a CF slot on your PDA – and the generous screen real estate on modern handhelds, you can easily DIY-up your own Portable Media Sort-of-Center. Both Pocket PC and Palm OS devices include music players of a sort, and Microsoft's mobile Media Player supports some video formats, but for DIVX and WMV support on Windows Mobile 2003, download Pocket MVP (**www.wincesoft.de**). If you're using a Palm device, try out mmplayer, from **www.mmplayer.com**.



Thanks for the memory

A Memento-like recall isn't always a problem.

Hitherto, there's always been one huge problem that's done PDAs no favours at all: memory. While they've never been the most capacious critters, all too many of us have fallen victim to the fact that when the battery went south, your data went with it, unless you'd already stuck it on a memory card or synched to your PC. We're delighted to see that this is being addressed in the latest generation – in Pocket PCs, at least – with secure storage areas that keep hold of your data for longer. True, it's not a vast archive resource and if you're efficient enough you won't have to use it, but it sure is one less thing to worry about – particularly with wireless connections and big screens swiftly sucking down any remaining battery power.

SCREEN KIT

£10 Saitek
www.saitek.com

We've never suffered a scratched PDA screen, and the fluff left by these dry-wipes and bubbles trapped under the plastic, suggest you're better off without them.

PCFormat Verdict
"Works ok, but it's just not quite cheap or cheerful enough for us." **70%**

STORAGE CASE

£35 Targus
www.targus.com/uk

Dislike the tacky plastic case that came with your PDA? Why not replace it with this slightly less tacky plastic case? It's handy, but too big to easily pocket.

PCFormat Verdict
"Protects but doesn't satisfy, due to market-stall quality." **64%**

SNAP-ON TYPE

£20 Logic3
www.logic3.com

The final solution to rubbish handwriting recognition. Slender Ipaq and insensitive buttons make your hands cramp, but it's very mobile and the plastic build will last.

PCFormat Verdict
"Low expense. If your tendons can take it, it's easier than writing." **74%**

SOUNDFEEDER

£10 Special Reserve
www.specialreserve.com

Plugs into a headphone socket and broadcasts the output on FM. Tuning takes seconds and the range exceeds 10 meters, although static spoils playback.

PCFormat Verdict
"Works a treat, but shoddy sound quality makes it hard to justify." **77%**

CLOTH KEYBOARD

£80 Logitech
www.logitech.com

Ah, now this looks more like the future was supposed to. This is tough and works well. However, you need a totally flat surface, money, and a now-dated Palm.

PCFormat Verdict
"Great idea, but can we have it for a PDA that we can actually own?" **79%**

WLAN CARD

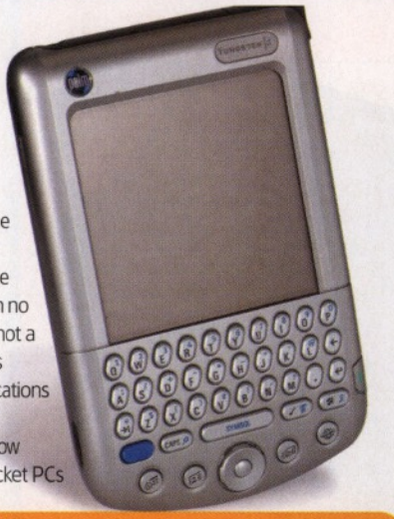
£130 Socket Communications
www.socketcom.com

This CF card brings easy and effortless Wi-Fi connection and doesn't hit battery life too hard either, although the price is certainly going to hurt all but the richest.

PCFormat Verdict
"Instant Wi-Fi for all the Pocket PCs of yesteryear." **80%**

PALM TUNGSTEN C

£330 Palm



Up until very recently, we were convinced that legislation should be issued, somewhere, about how small keyboards can reasonably be expected to go. We've faced more than our share of cramped over-resistant buttons, and frankly we'd rather everyone went away and invented proper voice recognition rather than lumber us with useless keyboards just to show off how small their screen can be.

However, were this the case we'd have the whips seeking out the blackmail materials for the Tungsten C, because its tiny QWERTY keyboard is remarkably good at text entry. It's a bit of a bruiser with it, too, with a 400MHz processor and 64Mb RAM pairing it that's up to the speed of the latest Pocket PCs. Built-in WiFi is another rarity, and along with 51 spare megabytes of RAM and *Microsoft Office* support, this should munch down a healthy number of documents. Oh, and there's also a handy SD card slot for when the power does run out.

Unfortunately, there's little chance of more incriminating evidence – with no MP3 player included as standard it's not a party machine, although *RealPlayer* is easily installed and the *Kinoma* applications bounce video over with ease. More significantly, the screen brightness is low while the price isn't – at this level, Pocket PCs

PCFormatVerdict

- Powerful enough for a Palm, Wi-Fi as standard
- Heavy and expensive: not a great combo for a Palm PDA

"A powerful Palm, but not the killer combination that we'd hoped for at this price point, frankly."

79%

→Detail

CPU 400MHz Xscale PXA255
RAM 64Mb
ROM 16Mb
OS Palm 5.2.1
Display 320 x 320, 3.5-inch
Wireless Infrared, Wi-Fi
Expansion SDIO
Audio Speaker, headphone
Dimensions 122 x 78 x 17mm
Weight 178g
Web www.palm.com
Phone 0118 974 2700

PALM TUNGSTEN T3

£280 Palm

→Detail

CPU PXA255 400MHz
RAM 64Mb
ROM 16Mb
OS Palm OS 5.2.1
Display 320 x 280, 3.5-inch
Wireless Bluetooth, infrared
Expansion SDIO
Audio Speaker, headphone
Dimensions 108 x 76 x 16mm
Weight 153g
Web www.palm.com
Phone 0118 974 2700

We've seen better product titles in our time. It's almost too tempting to resist the urge to make cheap remarks about Arnold Schwarzenegger, particularly when presented with this cybernetic-style nifty pull-out screen. We'll remain strong, however, and confine ourselves to pointing out that, unlike the film, this T3 is actually really quite good.

The pull-out transformation is the biggest selling point – apart from being undeniably cool, it whacks the screen size up to 320 x 480, all of it just waiting for whatever you can throw at it. It's at its most impressive in video playback – just yank it out and the window automatically resizes to magnify the footage – but there's less entertaining joy from day-to-day use. The Graffiti window can even be banished entirely because you can write directly on the screen – if you're fans of the old-school approach, simply pull up the traditional input panel or other functions from a shortcut panel on the screen base.

The engine room sets a storming pace with a 400MHz processor and 64Mb of RAM, while integrated Bluetooth complements the infrared port for wireless communication. Once more, we'd like Wi-Fi as well, but the SD card makes this an add-on possibility. This omission aside, it's a stormer.

april/2004 silver PCFormat

PCFormatVerdict

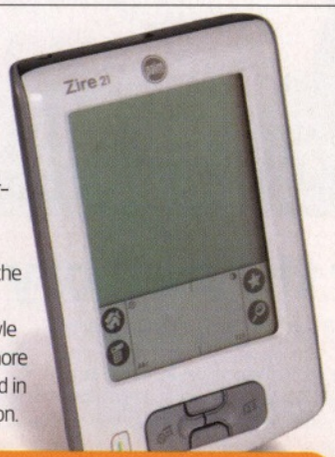
- Cool factor, excellent screen, rapid response time
- Obvious failure point, no Wi-Fi: why, oh why...?

"It's the coolest and the cleverest that we've seen so far – but damn that lack of Wi-Fi...it's just not fair."

89%

PALM ZIRE 21

£73 Palm



Compared to the weapons-grade wonders that pad out the upper ranks of this test, the Zire 21 is the technological equivalent of dragging a bit of charcoal out of the fire and dashing off a buffalo sketch on the cave wall. Don't be distracted by the white faux-Apple trim – note instead the undersized black-and-white screen, shrunk by the Graffiti input panel to a mere 160 x 160 resolution for displaying the note, memo, calendar and financial programs. Power comes from an equally antique ARM processor and 7.2Mb of memory, and data from an infrared port and mini-USB connection. This is not a device for the gadget freak.

Those who get out a bit more, however, won't have any trouble with the basic organisation functions – the Zire can certainly stash hundreds of phone numbers, take notes and keep a calendar in a speedy and efficient fashion. It's pretty bomb-proof, too, with Fisher-Price build quality that feels almost machine-washable, and the weedy specs mean the battery goes on for ever. The downside is that the only entertainment value you'll have is from throwing it at people or convincing vacuous style zombies that it's an updated iPod. There are more serious problems, too: the screen's hard to read in low light and there's zero potential for expansion.

PCFormatVerdict

- Very cheap, offering basic functionality
- Monochrome, poorly lit, no expansion potential

"Basic powers at a rock-bottom price, but the poorly lit screen spoils the Luddite charm factor."

65%

→Detail

CPU Texas Instruments OMAP311 ARM
RAM 8Mb
ROM 2Mb
OS Palm OS 5.2.1
Display 160 x 160, 4-bit monochrome, 3-inch
Wireless None
Expansion None
Audio None
Dimensions 111 x 73 x 15mm
Weight 107g
Web www.palm.com
Phone 0118 974 2700

PALM ZIRE 71

£199 Palm

→**Detail**

CPU Texas Instruments OMAP 144MHz ARM
RAM 16Mb
ROM 8Mb
OS Palm OS 5.2.1,
Display 320 x 320, 3-inch
Wireless Infrared
Expansion SDIO
Audio Speaker, headphone
Dimensions 114 x 74 x 17mm
Weight 150g
Web www.palm.com
Phone 0118 974 2700

Well, it's already blue, it's already silver – what else can be added? Of course: a built-in, *totally rubbish camera!* Modern innovation can be a little tiresome sometimes. Still, this more savvy big brother to the idiot man-child of the Zire 21 has a good idea of what constitutes desirable electronic gadgetry. Sliding the back down reveals the lens of the 640 x 480 CCD, and a tap of the joypad gives some impressively colourful images on the three-inch screen, although they are, of course, terrible once you get them on anything with a decent resolution.

More standard applications look more consistently impressive, thanks mainly to a good screen, although it's a shame that the Graffiti input area cuts off the lower section. The Palm OS might not have the insidious familiarity of its Windows rival, but it's easy to get the hang of and very quick off the mark, ably served by the 144MHz ARM processor. We're not huge fans of the bundled *RealPlayer* as a choice for MP3 playback – too many bad memories of its ad-filled desktop sibling – but the polyphonic audio sounds good and the *Kinoma* video player ain't bad either. No wireless connections other than infrared mean that it's not much cop for business use, but for affordable multimedia on the move it's quite charming – although we can think of several smartphones that are snapping at its heels.

PCFormatVerdict

- Well designed, easy to upgrade, and cheap with it
- It's hardly original, and looks a lot like a Mac

"For the Mac style-addict who deep down wants a real machine. It's also nice and cheap with it."

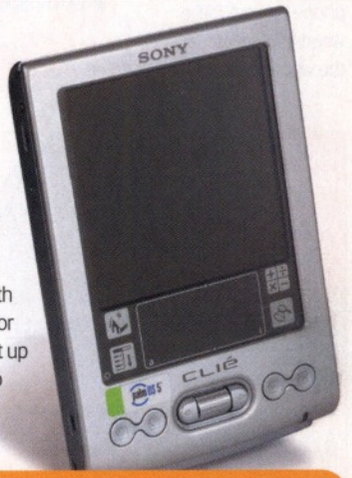
74%

→**Detail**

CPU
200MHz Motorola LMXL
RAM 16Mb (11Mb free)
ROM 8Mb
OS Palm OS 5.2.1
Display 320 x 320, 3-inch
Wireless None
Expansion Memory Stick Pro
Audio Speaker
Dimensions
110 x 75 x 12mm
Weight 147g
Web www.sony.com/uk
Phone 020 7365 2934

SONY CLIE PEG-TJ35

£140 Sony



Another combatant in the Palm-powered tussle for the budget market, the £140 price tag on display here isn't much compared to the pricier products at the top, but you don't get a storming return on your investment. The 200MHz processor keeps things moving along nicely enough and it's, y'know, shiny, but after that the cupboard gets decidedly bare. Of a paltry 16Mb RAM, only 11Mb can be used and a mere 8Mb of ROM isn't great either. True, this can be beefed up using the Memory Stick slot but there's not much of a motivation to – with no headphone socket and single puny speaker, music playback is a non-starter, and the gloominess of the 320 x 320 screen gives mediocre video performance too.

Sticking with the organisation gives less cause for complaint. Sony's customised interface isn't as simple as the Palm standard, but it's nowhere near as confusing as the UX-50's and has 12 easily-programmed shortcut functions which come in very handy. The scroll button mounted on the front is actually an improvement on the jogwheels favoured by the other manufacturers, and with practice you can go without using the stylus for some time. Sadly, the moment you connect it up to your PC things turn sour again – there's no desktop cradle and no *Office* support for the documents you've created.

PCFormatVerdict

- Low price, decent speed, particularly easy to use
- No headphone socket, proprietary expansion, no cradle

"Pricey just for the basic organiser functions and weirdly lacking for high-end applications."

66%

SONY CLIE UX-50

£570 Sony

→**Detail**

CPU Sony CXD2230GA
RAM 16Mb
ROM 64Mb
OS Palm OS 5.2.1
Display 480 x 320, 3.2-inch
Wireless
Bluetooth, Wi-Fi, infrared
Expansion Memory Stick Pro
Audio Speaker, headphone
Dimensions
103 x 86.5 x 17.9mm
Weight 175g
Web www.sony.com/uk
Phone 020 7365 2934

Sony's PDA division has always been an avowed fan of the We Saw It On *Star Trek* school of design, and it has just outdone itself. There are more features than you can shake a Memory Stick at, and it's presented with a sense of style that borders on lunacy. Traditional PDA performance comes through the Palm OS, but it's prettified to the point of unrecognisability on the exceptionally crisp 480 x 320 screen. The big difference to the Pocket PC offerings is the built-in keyboard (effective despite its size), although proper writing is tricky due to fiddly punctuation keys.

Regrettably, old-school penmanship is also unsatisfying thanks to the screen. Although only fractionally smaller than the other offerings, the big bezel makes it feel cramped, a sensation not helped by the spindly stylus. The interface itself isn't the simplest either, although in fairness this is due to the remarkable number of features that have been crammed in to it; Wi-Fi, Bluetooth, digital camera and video, at the top of the pile. However, the sheer complexity is irritating after the simplicity of the Palm designs: too fiddly for its own good.

PCFormatVerdict

- Features galore, keyboard, gorgeous looks
- Expensive, overcomplicated, and needlessly fiddly

"We never thought we'd say this, but it's just too high-tech for us. We say, wait until the space age."

69%

PCFVerdict

We've been kicked from networks, viewed a video clip 12 times and developed mutant handwriting. Was it all worth it?

Well, it's not been the most mismatched confrontation – never have so many been judged by so few differing specifications. Everybody in Pocket PC land is clearly buying their bits off the same stall, and the Palm posse is picking over what's left. Things aren't helped by the wildly differing purposes they all serve – pitting the rudimentary Zire against the Cape Canaveral spec of the Toshiba was never a fair fight, and we've not seen anything here that's worthy of outright criticism. In the end, though, the looming spectre of the mobile phone drove out the weedier players – even the worst Nokia has an enviable contact list and address book built-in, and the prospect of lugging around the still-clumsy text-recognition interface of the smaller systems, just for a memo function, doesn't seem too hot. The bigger beasts are a less easy travelling companion, but the number of things you can do with them makes it worthwhile – stick a keyboard on the bottom and you've something that'll give some desktop PCs a run for their money. It remains to be seen if the PDA will last as a proper platform, but it needs to head up the size ladder and meet the conventional PC coming down, if it's going to have half a chance. **PCF**

NEXT MONTH PROJECTORS

PCFormat BEST OF TEST Pocket PC PDA APRIL 04

HP IPAQ POCKET PC H4150

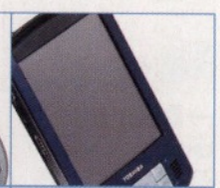
The Toshiba was always a favourite, crushing all opponents through sheer power, but in the end it's just not pocket-sized enough. The HP's dual connections and gorgeously diminutive dimensions mean it can sneak past and take the flag.

PCFormat BEST OF TEST Palm PDA APRIL 04

PALM TUNGSTEN T3

It's not the cheapest, the fastest or even the best equipped, but the T3 wins through as a competent all-rounder. The Clié UX-50 takes the high ground, the Zire 21 takes the depths, but neither presents such a harmonious experience as the T3.

POCKET PC PDAS



MODEL	AJP MIO DIGIWALKER	ASUS MYPAL A620	DELL AXIM X3I	FUJITSU SIEMENS POCKET LOOX 610 BT/WLAN	HP IPAQ POCKET PC H4150	TOSHIBA E800 WIFI
CPU	400MHZ PXA263	INTEL PXA255 400MHZ	INTEL XSCALE PXA263 400MHZ	400MHZ PXA255	INTEL PXA255 400MHZ	INTEL PXA263 400MHZ
RAM	64MB	64MB	64MB	128MB	64MB	128MB
OS	WINDOWS MOBILE 2003	WINDOWS MOBILE 2003	WINDOWS MOBILE 2003	WINDOWS MOBILE 2003	WINDOWS MOBILE 2003	WINDOWS MOBILE 2003
WIRELESS	WI-FI, BLUETOOTH	BLUETOOTH, INFRARED	WI-FI, BLUETOOTH, IR	WI-FI, BLUETOOTH, IR	WI-FI, BLUETOOTH, IR	WI-FI, BLUETOOTH, IR
EXPANSION	CF, SDIO	COMPACT FLASH	SDIO	COMPACT FLASH, SD	SD	COMPACT FLASH, SD
PRICE	£399	£360	£279	£470	£399	£485
SCORE	86%	73%	84%	73%	92%	90%

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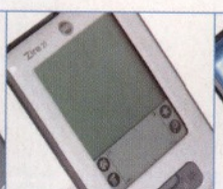
PALM PDAS



MODEL	PALM TUNGSTEN C	PALM TUNGSTEN T3	PALM ZIRE 21	PALM ZIRE 71	SONY CLIE PEG-TJ35	SONY CLIE UX-50
CPU	400MHZ XSCALE	PXA255 400MHZ	TEXAS INSTRUMENTS OMAP311	TEXAS INSTRUMENTS OMAP 144	200MHZ MOTOROLA LMXL	SONY CXD2230GA
RAM	64MB	64MB	8MB	16MB	16MB (11MB FREE)	16MB
OS	PALM OS5.21	PALM OS 5.21	PALM OS 5.21	PALM OS 5.21	PALM OS 5.21	PALM OS 5.21
WIRELESS	WI-FI, INFRARED	BLUETOOTH, INFRARED	NONE	INFRARED	NONE	WI-FI, BLUETOOTH, IR
EXPANSION	SDIO	SDIO	NONE	SDIO	MEMORY STICK PRO	MEMORY STICK PRO
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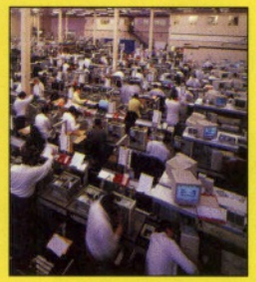

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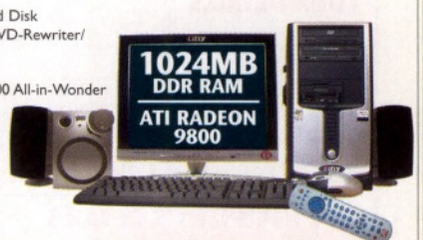

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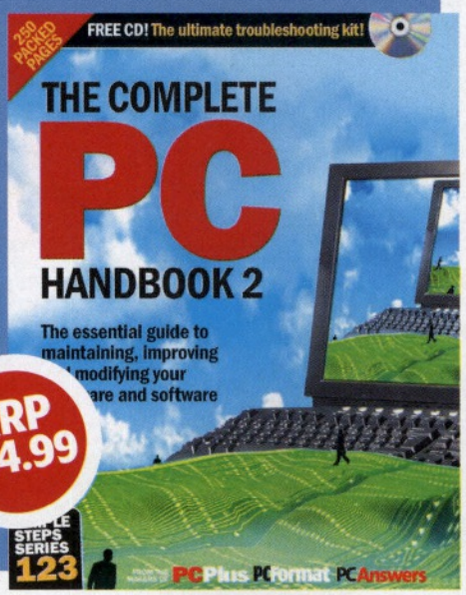
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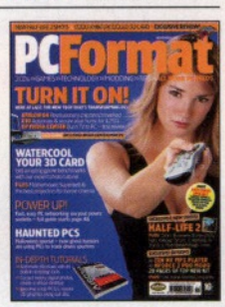

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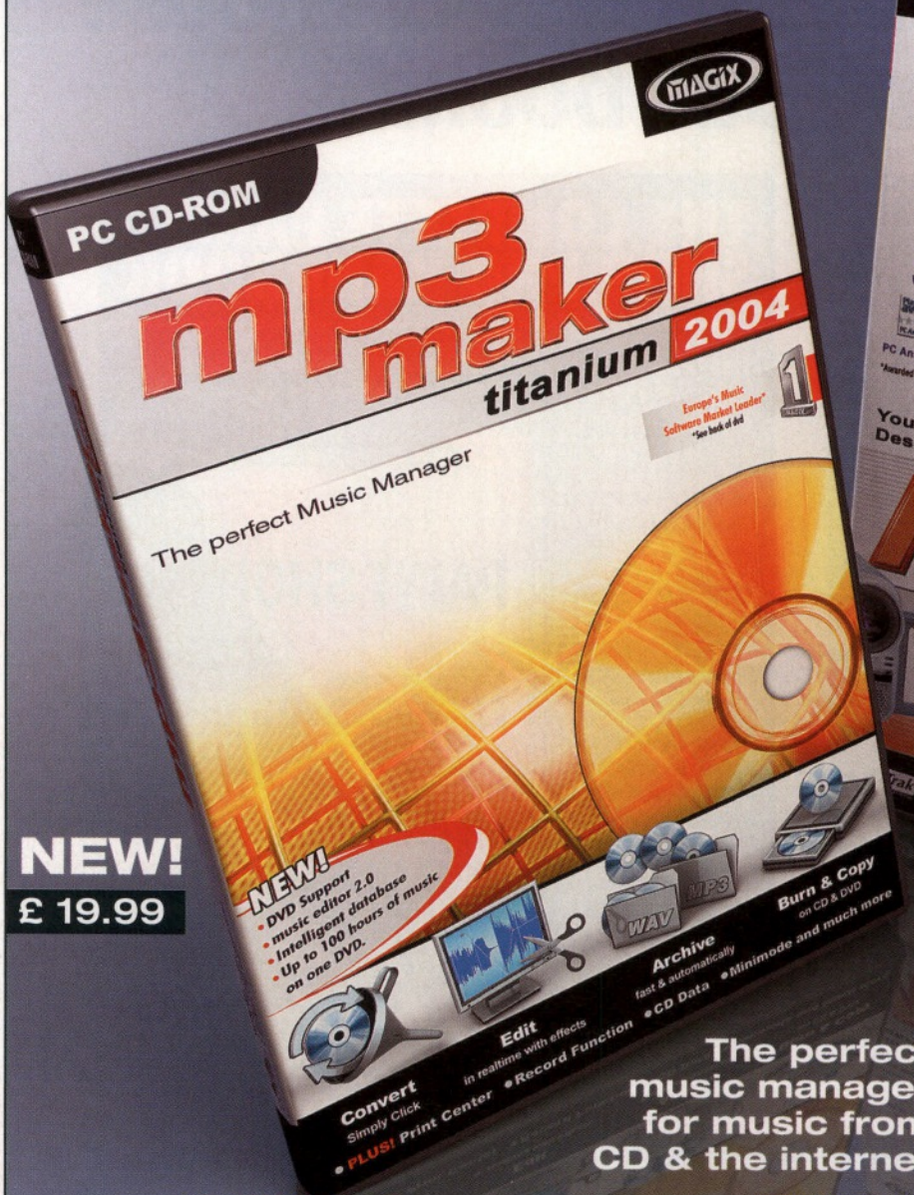

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Well, OK, then. This month on the discs we have... Oh, I can't be bothered with this – I wanted to be a lumberjack, leaping from... No, I wanted to be a future killer, guns trained on the gods à la *Painkiller* or *UT2004*. Or was it SpongeBob Squarepants? These adrenaline boosters get me so confused. Wonder where adrenochrome comes from....

OK, OK, we've got *Photoshop CS* on the disc. And if you look closely at my face, you'll see it's been assembled out of a million *PCFormat* logos, all cleverly tessellated with *Canvas 7*. My real face is in a jar I keep by the door – but who is it for, eh? The milk man, that's who. We work on a barter system in Somerset – faces for milk. Simple.

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UNREAL TOURNAMENT 2004

Mechanised multiplayer madness on page 118.

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FPS on a titanic scale.

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Self-affirming financial fun.

Also on the discs...
X2: The Threat, UFO: Alien Invasion, Vietcong: Fist Alpha, Games Factory Pro, apps and files for this month's Gamemaker tutorials, much more...

↘FIRST-PERSON SHOOTER

UNREAL TOURNAMENT 2004

Who needs a plot when you have a gun the size of a tree trunk?

NEED TO KNOW

Publisher Atari
Web www.unrealtournament.com/ut2004/

Needs 1GHz CPU, 128Mb RAM, 64Mb 3D card (GeForce 2 or better)

A fierce war is being fought far into the future, the lines are drawn and the armies facing each other are of astonishing proportion. The conflict will be harsh and brutal, the combatants merciless, and no end seems to be in sight. The time has come to choose your side – do you prefer *UT* or *Quake*?

Pfft. No matter what your answer, it must surely be a moot point. No one can deny the sheer quality of both titles, and their ever-improving sequels consistently raise the bar when it comes to FPS shooters. We're proud to present a demo of *UT2004*, and by golly does it look good. Packed tightly into this package are five new maps and six different game modes. There are already hundreds of *UT2004* demo servers out there hosting all of these, so what are you waiting for? Make that CD drive spin, turn the lights down low and get blasting.

↘CONTROLS

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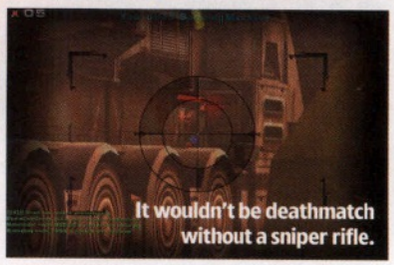
Backwards	[S]
Left	[A]
Right	[D]
Fire	Left mouse button
Aim	Mouse control

Big guns require big vehicles to transport them.



It wouldn't be deathmatch without a sniper rifle.

We particularly recommend the frantic AS-Convoy, which is fought across mammoth land cruisers as they speed through a remote desert planet. It really is ace. **PCF**

↘FIRST-PERSON SHOOTER

PAINKILLER

For heaven's sake, don't attempt to swallow our disc.

NEED TO KNOW

Publisher Dreamcatcher
Web www.painkillergame.com

Needs 1.5GHz CPU, 384Mb RAM, 64Mb 3D card (GeForce 3 or better)

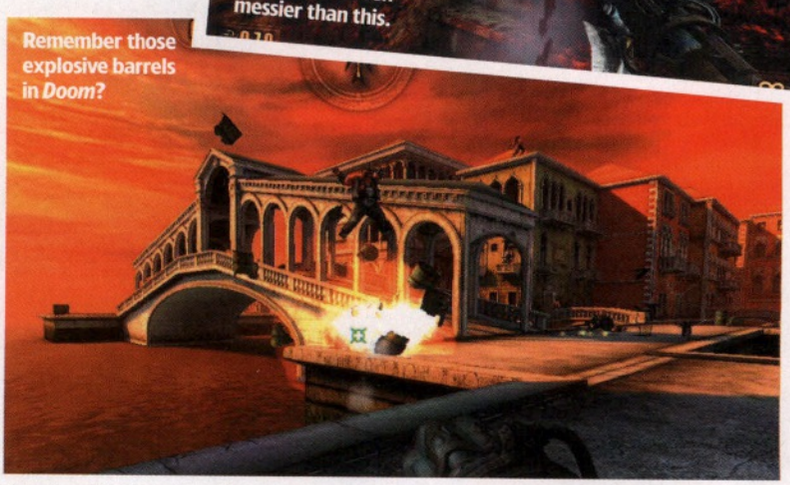
This has to be one of the strangest demos we've covermounted for a while. Claiming to be an old-school FPS, *Painkiller* certainly takes its inspiration from *Doom* with its hellish imagery and other-worldly setting. This demo is of the third level of the game, and features a city redolent of Venice, through which you must battle hordes of the most bizarre humanoids, ranging from eight-foot skeletons to what seem like oversized gangsters.

Like many of the current crop of shooters, *Painkiller* showcases an impressive physics engine, with barrels, crates and enemies all responding to the forces around them and your hideously overpowered weaponry.

↘CONTROLS

Forwards	[W]
Backwards	[S]
Left	[A]
Right	[D]
Fire	Left mouse button
Alternate fire	Right mouse button
Grappler/blade	[1]
Chaingun/rocket	[2]

It gets even messier than this.



Remember those explosive barrels in *Doom*?

There's nothing here that will tax your brain at all, but we recommend you stretch your trigger finger beforehand, in preparation for some serious gun-toting action. Smash the crates to find extra items and keep out of the water if you want to stay alive. **PCF**

↘RACING

COLIN McRAE RALLY 04

The Scottish power-slider is infinitely cooler than Mike Smith ever was.

To say we've been eagerly awaiting the fourth instalment of this fantastic rally series would be something of an understatement. True, when Colin arrived on our PCs for the third time, he didn't impress us quite as much as we hoped he might, but there's no denying that the *Colin McRae Rally* series is a cornerstone of PC rally games.

This demo gives you a chance to get to grips with the new damage model, the even more realistic physics, and to ogle the quite scrumptious graphics. The game's attention to detail is faultless and the landscape superb. Play close attention to your co-driver and keep an eye on the course notes he reads out for you: they're key to your success. For this is not an easy game, by any measure – four iterations in, fans expect a challenge, and by criminy they've got one. But it's all the more rewarding for it, especially as you try to surpass your own best time scores. For the full, arm-jarring, carpal tunnel-inducing experience, we recommend you try a force feedback wheel and select a manual gearbox. Just don't try to explain to the boss why you won't be able to do any typing for a week. **PCF**

Just be glad you don't have to repair and clean the car up afterwards.

Coming soon: *Rally Navigator Simulator*. With free incontinence pants.

NEED TO KNOW

Publisher Codemasters
Web www.codemasters.co.uk/colinmcraerally04/uk

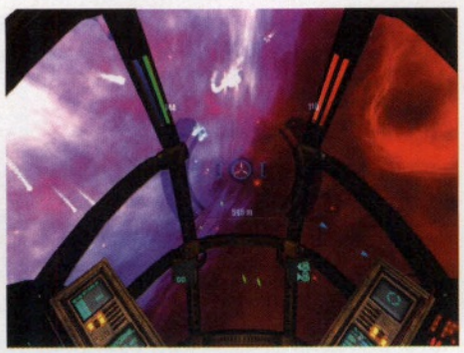
Needs 1GHz CPU, 128Mb RAM, 32Mb 3D card (GeForce 2 or better)

↘CONTROLS

Controls	Cursor keys
Handbrake	Space

MORE DISC DELIGHTS

Let these extra demos soak up your time like a giant entertainment sponge...



X2: THE THREAT

Some games are so impolite. Just when *Freelancer* had come along, won our affection and settled down to take a special place within our hearts, *X2* appears out of nowhere, puffing its chest out in challenge. Those with a love for space opera and all the glory of interstellar exploration and combat will be thoroughly spoilt with this fabulous demo.

UFO: ALIEN INVASION

When we finally make contact with alien races from the far-flung reaches of the universe, it's a fair bet they'll sue abundantly for misrepresentation, seeing as how we've always depicted them as such aggressive creatures, intent to feast on our soft, soft brains. But, until then, you're free to enjoy this demo of the *X-Com*-style tactical combat game *Alien Invasion*.

VIETCONG: FIST ALPHA

The demo features two maps, Stream and Bridge, which are self explanatory, and let you choose from a veritable armoury of rifles and submachine guns, including many featured in the expansion. You'll need to brush up on your orienteering skills but a free map is included and should you get stuck, your team-mates are sure to give you a hand. That is, if Charlie didn't get them all first...

IMAGE EDITING

ADOBE PHOTOSHOP CS

DVD ONLY

The latest version of the premier image-editing program, for your delectation.

NEED TO KNOW

Publisher Adobe
Web www.adobe.com

Needs 1GHz CPU, 192Mb RAM, 280Mb HDD

Status 30-day trial

Serial number
None required

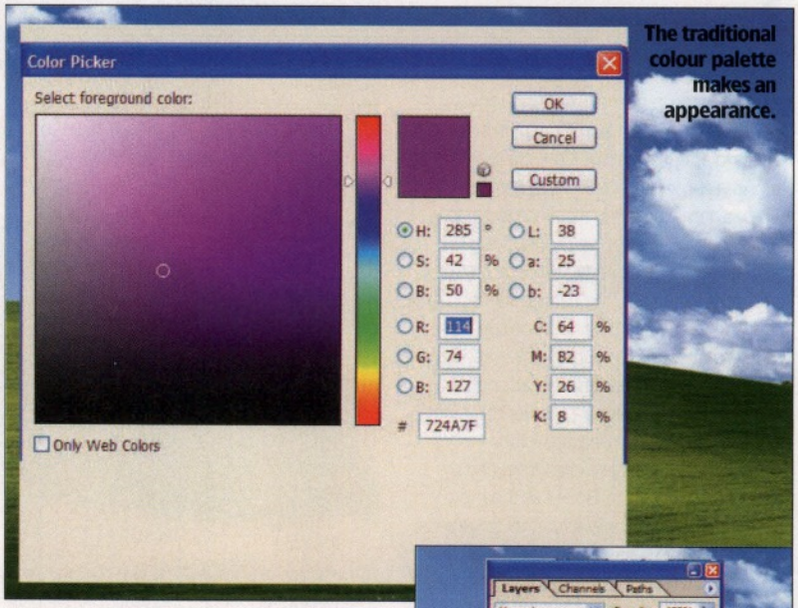
Provide a tabloid editor with a suggestive paparazzi shot, an invitingly blank front page, a couple of hours, and there's only one program he'll turn to; *Photoshop*, renowned among journalists for its ability to turn any seemingly innocent snap into a hotbed of sexual wotsits.

But it's not just sleazy hacks that can make the most of *Photoshop*. The program can be used by just about anyone, from a school kid messing around with his pals' faces to a professional design studio or print shop, which will dive deep into the code and create genuine works of art for Young British Artists to pass off as their own.

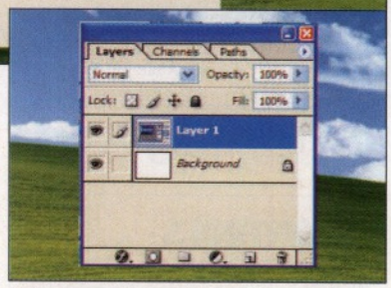
Filter-tastic

From this enthusiast source comes one of *Photoshop*'s other major benefits: plug-ins. *Photoshop* is one of the most customisable programs available today, and an advanced user will have access to more filters than a sewage plant. There are effects for just about anything, from creating realistic clouds in a clear sky, to adding or tweaking many variations of camera flare. Some of these are available free of charge, some have to be bought; our sister magazine *Computer Arts* always has an excellent selection on its coverdisc.

One thing *Photoshop* isn't, however, is an easy program to start using. You can use it well at the basic level for fundamental image editing tools, but to achieve the best results amd make the most of its powerful features, you'll need to read up and practise, practise,

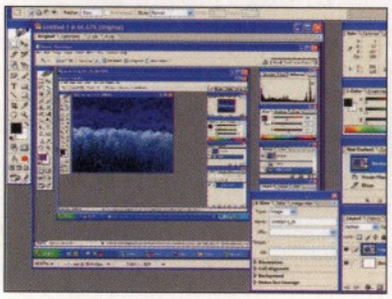


The traditional colour palette makes an appearance.



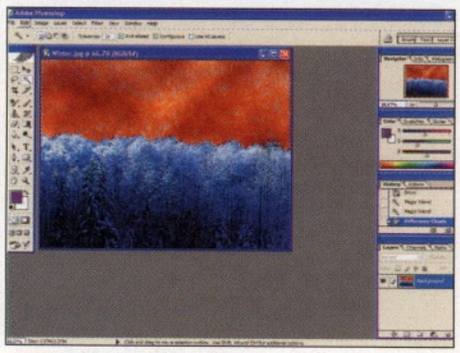
Using layers helps with editing complicated compositions.

***ImageReady* prepares your images for web use.**



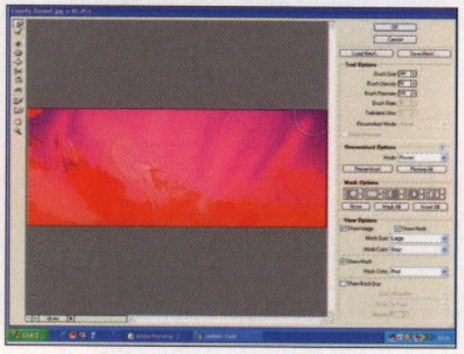
FILTERS

Photoshop's built-in plug-ins are enough for anyone.



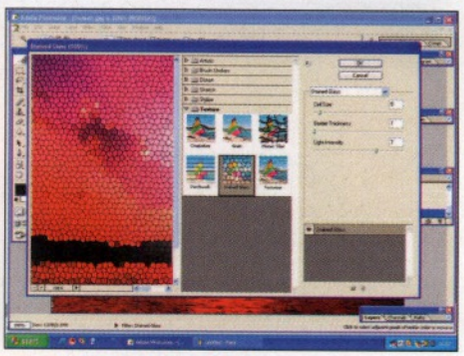
01 THE FILTERS MENU

Hold [Shift] and left-click an area to add to the already selected area; [Alt] + left click removes areas. The Select menu contains many other useful options. If you select the Filter menu, you can have a serious play with your images, using *Photoshop*'s readymade plug-ins. Our favourite is Render→Difference Clouds.



02 PORTNOY'S COMPLAINT

The Liquify option is different from most *Photoshop* filters. First, it can be accessed through the root Filter menu; and second, rather than relying on special effects, it enables you to pull and mould the grid underlying the picture, simply by clicking and holding the left mouse button.



03 THE HUMAN STAIN

There are many other effects in the Filter menu. For example, Stained glass breaks up the image into averaged pentagons with thick black lines and a holy backlight; Solarise makes distinct edges glow; Pixellate adds noise to the image. If you want to undo a particular effect, you can right-click on items in the History menu.

ANATOMY OF AN IMAGE

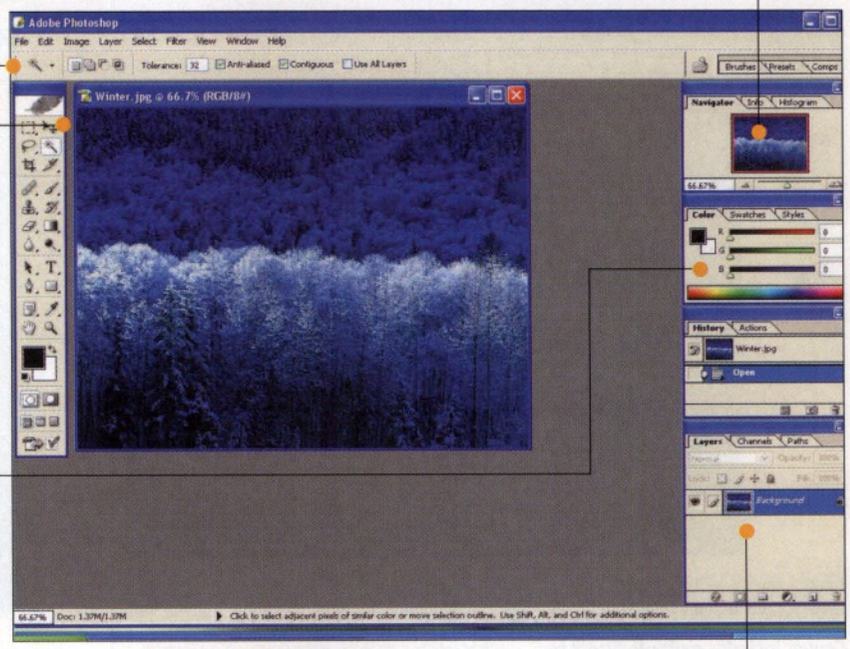
The most complex tools are but one click away.

TOOL TIPS

This pane deals with the properties of the currently selected tool. You can change the acuity, colour and many other options from here.

HISTORY

This pane enables you to step back and forwards indefinitely in your editing in order to redress errors or check the origins of effects.



TOOL PALETTE

The most important pane, this enables you to cut, paste and use basic shapes. Left-clicking and holding on a button will bring up further options.

COLOURS

There are three different types of colour menu, so you can select the exact colour you want from a choice of swatches, palettes and blending tools.

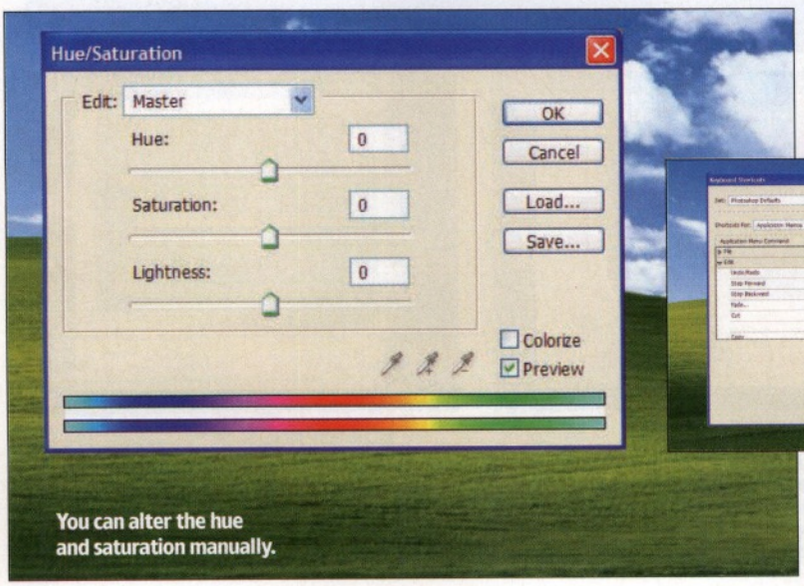
LAYERS PALETTE

One of the most powerful tools at your disposal. Images can be placed on top of each other, rearranged and used as masks and filters.

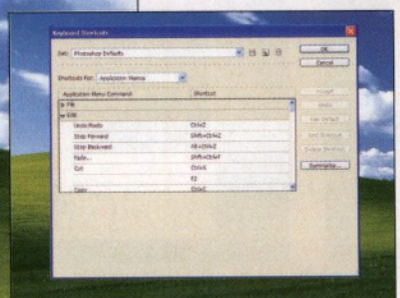
practise. Thankfully, Adobe has included a selection of excellent tutorials – you can access them through **Help➠Photoshop Help**, or by hitting [F1]: the tutorials are tucked away at the bottom of the list. We've also included a short walkthrough of its basic functions.

In fact, as an added bonus, there's an *Adobe ImageReady* demo included as well. This flexible tool enables you to create perfect web graphics every time, although it shares the *Photoshop* demo's 30-day limit. If you need to make optimised images for your website, and possess a little technical knowledge, this is the program for you.

There are other image-editing programs that have similar abilities, too, but *Photoshop* is the oldest and most widely used and certainly well regarded as the best. We at *PCFormat* have managed to secure a full demo of it for you so go on, give it a shot! **PCF**



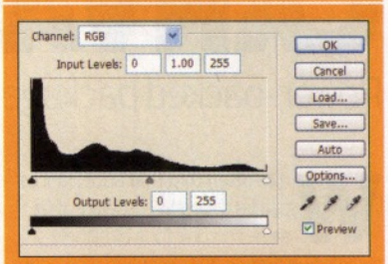
You can alter the hue and saturation manually.



Keyboard shortcuts are similarly easy to alter through this accessible menu.

It's all in the eyes

Fixing photos with *Photoshop* is a good way to get to know the program.



01 **First, automatically adjust colour levels. Open your photo. Click Image➠Adjustments➠Levels. The histogram displays the balance of shades in the image.**

02 **Drag the white and black sliders one way or another to raise or lower the cut-off points for black and white. The middle toggle alters the gamma levels of the image. You can also adjust levels by clicking the Auto button or selecting Image➠Adjustment➠Auto Levels.**

03 **A colour cast is an unwanted bias of colour across areas of a photo. To remove it, click the Eyedropper tool from the Levels menu and select a neutral area, or select Image➠Adjustment➠Auto colour.**

04 **To remove red eye, first zoom in to the eyes so you can easily see the elements of red eye in contrast to the iris. Select the colour replacement tool by clicking and holding the sticky plaster button on the left-hand toolbar.**

05 **The Magic Wand automatically selects areas of a certain colour and shade with a single click. You can alter how close the colour is by changing the Tolerance setting in the panel at the top.**

↘IMAGE-EDITING

CANVAS 7

Power-packed package for all your painting prowess.

NEED TO KNOW

Publisher Deneba
Web www.deneba.com

Needs 500MHz CPU, 128Mb, Windows 2000/XP

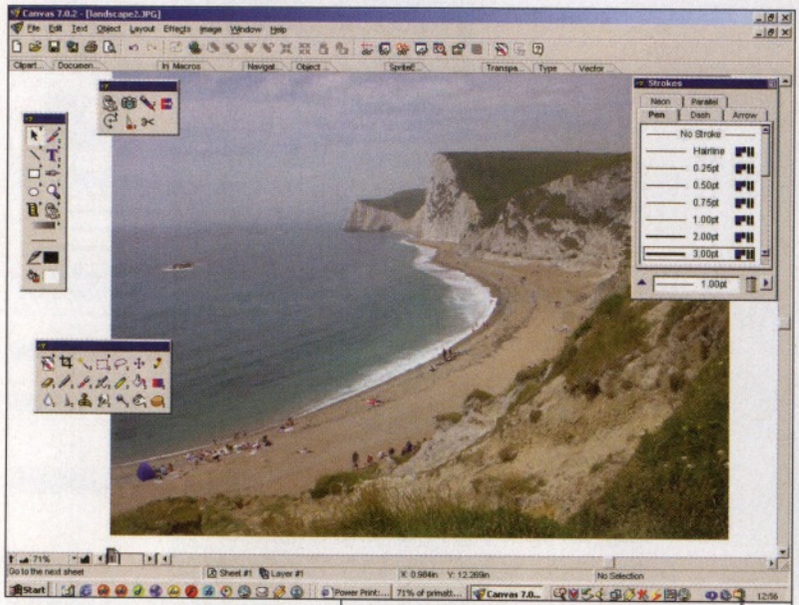
Status Full program as sold for US $400 (about £210)

Serial number Register at www.deneba.com/cv7reg to be emailed your serial number

We're often told that appearances can be deceptive, usually in that same moronic tone of blithely received wisdom as 'the exception proves the rule' and 'might is right.' Yet, looking at the clean, uncluttered and, some might say, sparse interface of *Canvas 7*, you'll no doubt be surprised to learn just how powerful the program actually is. This is a very well-rounded professional graphics package that notably manages to be a jack of all trades, but a master of most of them too. Rather than simply focusing on a single area of graphics work, *Canvas 7* can be used for digital photograph retouching, drawing, painting, desktop publishing and even web design.

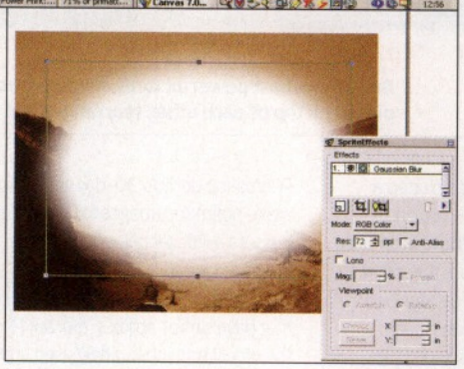
Whether you've been using a package such as *Adobe Photoshop*, *Macromedia Fireworks* or *Paint Shop Pro* to make adjustments to your digital photographs, it shouldn't take you long to feel at home with *Canvas 7*. The real beauty of the program is that you're never overwhelmed by various buttons and options you don't need – you're in control of what appears on the screen.

It won't be long before you're docking and undocking palettes left, right and centre, so you only have immediate access to the tools you need to complete a particular task. If you're used to working with very large images, you'll immediately notice that *Canvas 7* is much faster at dealing with such files, and proves less memory intensive than some <cou*PhotoShop*gh> competing programs.



***Canvas* includes multiple filters for all your editing pleasure.**

Once you've installed and worked with the full version of *Canvas 7* that is included on this month's coverdisc, why not give the latest version of the program a try? You'll find details of *Canvas 9* on the Deneba website, and more instructions on how to use it. And there's also a trial version on the coverdisc. Upgrade details are to the right. **PCF**



***Canvas* can handle all sorts of images, from JPEGs to TIFFs. Professional designers will be surprised at *Canvas'* breadth of tools.**

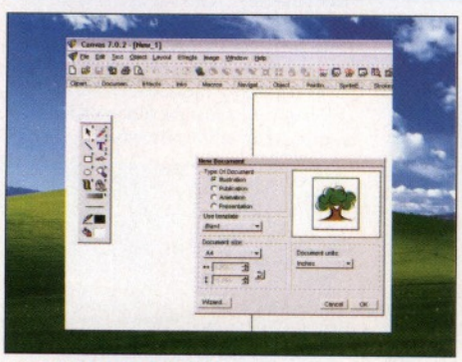
UPGRADE READER OFFER

Save £155 on the latest version of *Canvas*.

Canvas 9 has even more features than its predecessor and is compatible with all the latest software, too. We've included a demo of it on the disc, and if you decide you like it, *PCFormat* readers can buy *Canvas 9 (available in three editions)* for just £146.86: that's a whopping saving of £182.13! To get your special discount price, call 020 8200 0100.

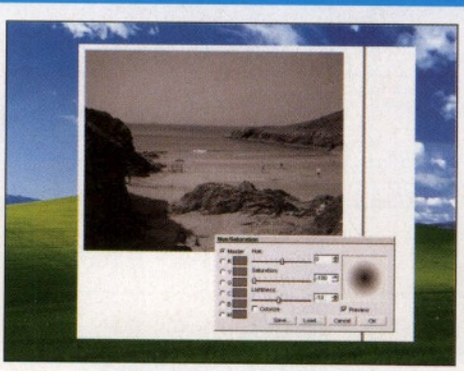
UNDER CANVAS

Get to grips with the basics of this powerful image editor.



01 PREPARATION

Launch *Canvas*, click File➡New, make sure the program is set to work in Illustration mode and choose a suitable document size. Click File➡Place and then select the image you want to work with. Now draw a box to indicate the size of the image on the page.



02 SATURATION

Click on your image so it is selected and is showing a border around the edge. Now click Image➡Adjust➡Hue/Saturation to bring up the Image Adjustment window. Move the Saturation slider to the left to set it to -100 and set the lightness to -10. Now click OK.

03 NOISIFICATION

To add a film-like grain to your image, click Image➡Filter➡Noise➡Add Noise. Make sure you have the Monochromatic and Preview boxes ticked, then move the slider over until your image starts to appear grainy. Click OK when you have an effect that you're happy with.

↘ WEB BROWSERS

BROWSERBOB LIGHT

Make your own custom browsers with this free full program.

NEED TO KNOW

Publisher BrowserBob
Web www.browserbob.com

Needs Windows 95, Internet Explorer 5.5 or later

Status Full first version

Serial number None required

While Internet Explorer might be a damn useful program, it's not the most attractive we've cast eyes upon, and those of you who aspire towards a more aesthetically pleasing browsing experience will be jumping for joy when you get your hands on *BrowserBob*.

Making your web browser with *BrowserBob* is a doddle, and you don't need an ounce of programming know-how to get started. The program enables you to define the layout, colour and design of your software and even what noises it should make and when. With just a few clicks of the mouse, you can put together a basic web browser with reliable functionality.

Bob-a-job

If you're looking to create an internal browser for corporate use, *BrowserBob* is ideal: it's child's play to import logos, image files and set the home page to anywhere you wish. You can dispense with favourites lists, or feature your own company videos, flash, web radio or even motivational slogans, should the Brazil-like wish take you!

The functionality and customisation available to you with *BrowserBob* is fantastic and, should you want to take it one step further, we recommend you check out our special upgrade offer, as the Professional and Developer versions of *BrowserBob* expand your horizons even further. **PCF**

Browsers built with *BrowserBob* can be used to explore the internet just like IE can, but with more colour.

Should you so wish it, your browser can assault its users with a variety of sounds.

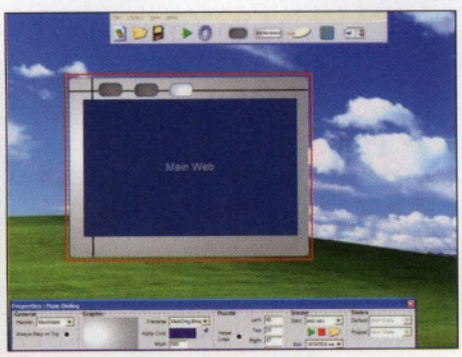
UPGRADE LATEST VERSION

Get the Professional or Developer versions for less.

We've managed to secure not one, but two, upgrade offers for you. The Developer edition is available at a 22% discount to *PCF* readers for 69 Euros, and the Professional edition is yours for 33% less at 193 Euros. Head over to the *BrowserBob* home page at **www.browserbob.com** to make your choice and input your discount code in the Coupon Code box after you click on the Buy Now link. The Developer edition code is BBDEV22PCFORMAT, and the Professional edition code is BBPRO33PCFORMAT.

BOB'S YOUR UNCLE

Add some colour and make your web browsing a refreshing experience.



01 GETTING IN THE FRAME

First, you'll want to define the general layout of your browser. How big should it be? Should it always be on top? How many buttons will your users require and is there anything you don't want them to get up to? Drag on buttons from the *BrowserBob* toolbar and assign them names and functions.

02 BACK TO BASICS

The background of your browser can be anything you like, from plain grey slate to any image you choose. Every button can also carry a custom graphic, so you can make an image for each one. For example, a small BMP file with the word 'Back' would, of course, be ideal for a Back button.

03 GETTING TESTY

Whenever you want to check everything's running smoothly, click on the Test button to see the fruits of your labour. You can then return to your work, or save the program as an .exe file by clicking the Build button. You've now made your very own web browser, and stuck two fingers up at Microsoft.

UPGRADE READER OFFER

Let *AceMoney* manage your business' finances.

The $20 version we're giving you is ideal for a home user or anywhere with a single licence. But should you be running a small business or need to install *AceMoney* on more than one machine, take advantage of reduced fees for multiple users. Get over to *AceMoney's* order page at **www.mechcad.net/products/acemoney/order.html** and gander at their great prices.

↘HOME FINANCE

ACEMONEY

Don't put money where your mouth is – give it sensible management instead.

NEED TO KNOW

Publisher MechCAD Software
Web **www.mechcad.net/products/acemoney/**

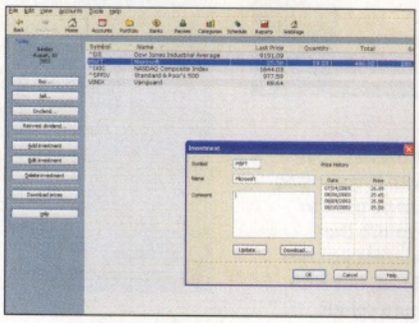
Needs 8Mb, Windows 95,

Status Full version, as sold for $20 (about £11)

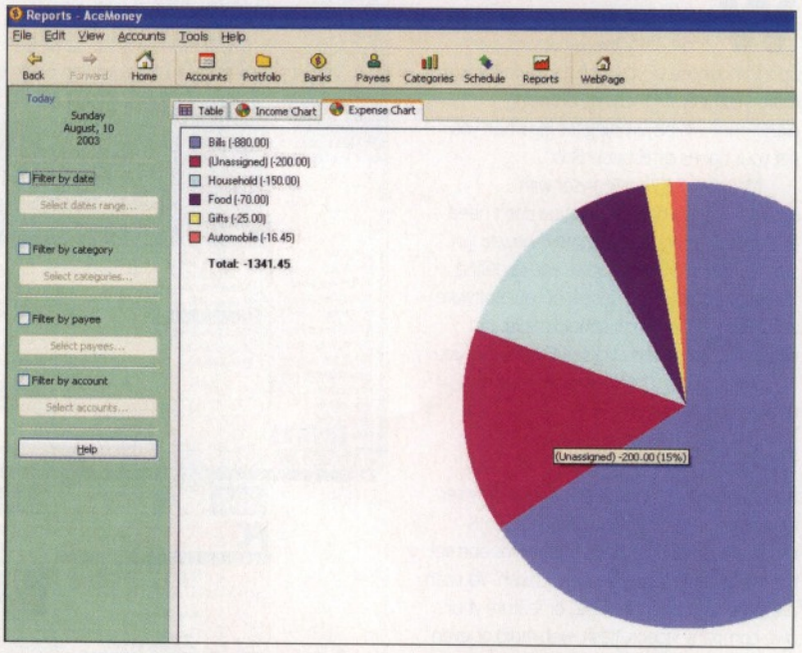
Serial number
None required

Being employees of the dark, sinister paymaster that is Future Publishing, we know what it's like to be on a tight budget, our collective noses pressed against a rough grindstone as the whips of our masters crack relentlessly around us, giving not a hint of respite from the relentless toil that seems so necessary in today's merciless and modern capitalist world...sob.

It's a good thing, then, that we're giving away *AceMoney* absolutely free on our PCF disc this month. This professional account management software is, rather appropriately, quite ace, extremely easy to use and will help you keep a tight rein on your spending habits, your stock portfolio and any bill payments that you make. If money is the root of all evil, then mathematicians will surely be able to balance *AceMoney* firmly on the side of good in another moral equation. With over 100 transaction categories, support for password protection and 150 different currencies, *AceMoney* has just about every single angle covered and is certainly powerful and clever enough for any home user or small business.



It's 10 times more helpful than your bank statements. And easier to open.

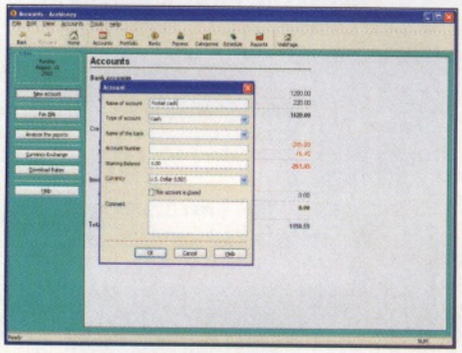


Pie chart jokes are 10 a penny - we need something better to get our teeth into.

AceMoney supports the popular .qif and .ofx finance file format, allowing you to download information from online banks, or import it from other account's software, as well as letting you print off your statements as text files or save them as HTML. You can even generate custom reports based on any parameters you define, as well as calling up bar graphs and pie charts. It automatically tracks your stock quotes from the net and, for those with very specific tastes, a Welsh version is even available. Now that's ace. **PCF**

ACCOUNT DRACULA

Don't let the bank manager bleed your finances dry – take control.

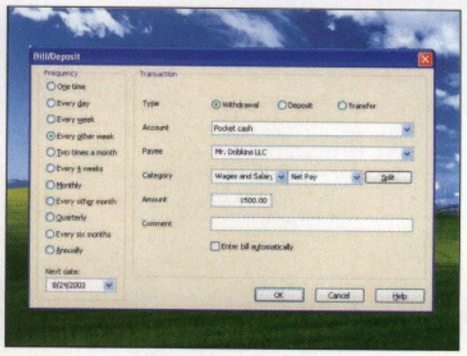


01 SHOW ME THE MONEY

Start *AceMoney*, go to the Accounts menu and select Add new... When and where prompted, you need to specify the following details: the name of your account, the currency in which you will be working, the bank, the balance and any other details that you will require when referring to it.

02 TRANSACTION MAN

Double-click on your accounts list and you find yourself in the account registry. Select New Transaction, which will bring up the above dialog box. You can specify any kind of deposit or withdrawal here, and be sure to add the date, amount and details on where the money has come from or is going to.



03 CASH MASH

To set up direct debits, pay cheques, or authorise any other regular transactions, you can use the Schedule screen. Specify how frequently the transaction takes place (whether it be weekly, monthly, quarterly and so on), and how much money is being paid in or taken out of the account in each transaction.

KOMPLETT.co.uk
-SAVE TIME AND MONEY

Fujitsu Siemens Loox 610
SKU: 121913

£349 inc. VAT

With its extensive connectivity and expandability concept, the Pocket LOOX delivers solutions which ideally suit the needs of business customers.

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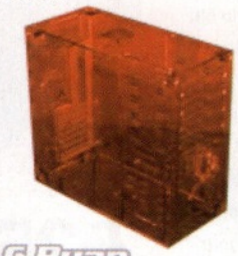

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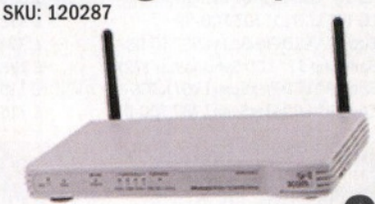

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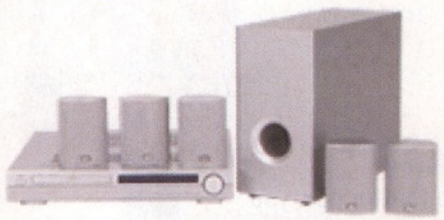

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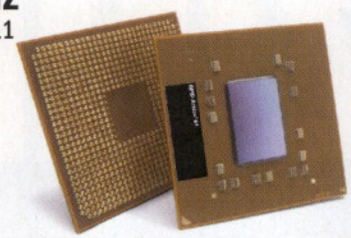
AMD Athlon64 3000+ 2.0 GHz

SKU: 122811



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122886	iRiver iGP-100 MP3,WMA,ASF,OggV.FM	£246
121447	iRiver iHP-120 dictaphone,FM Radio, 20GB	£307

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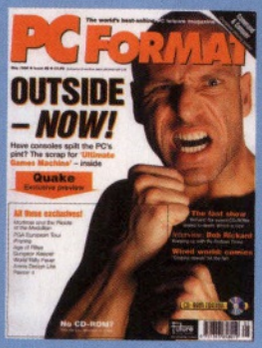

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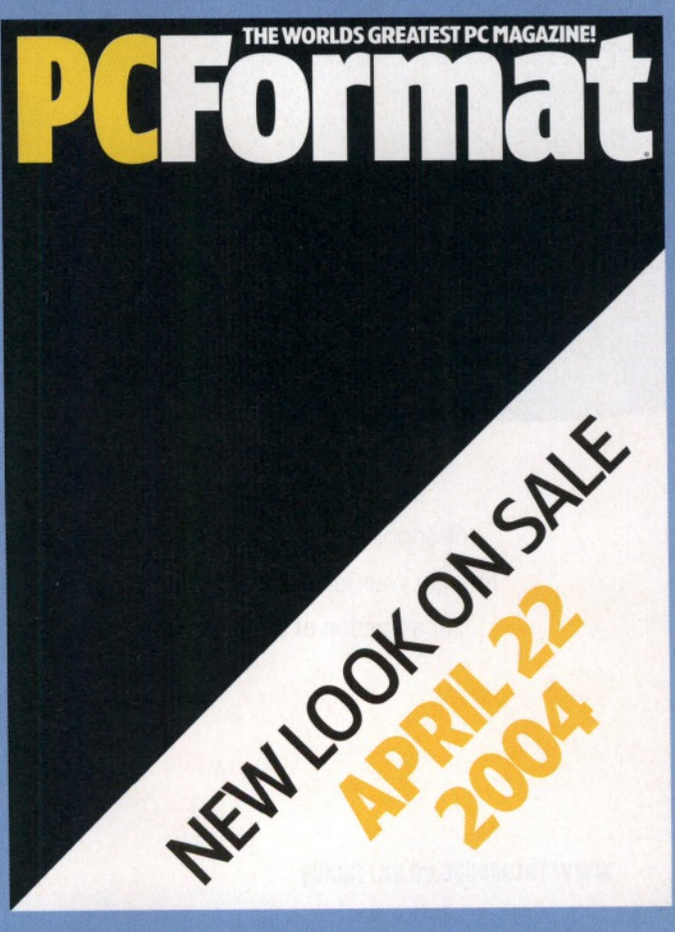

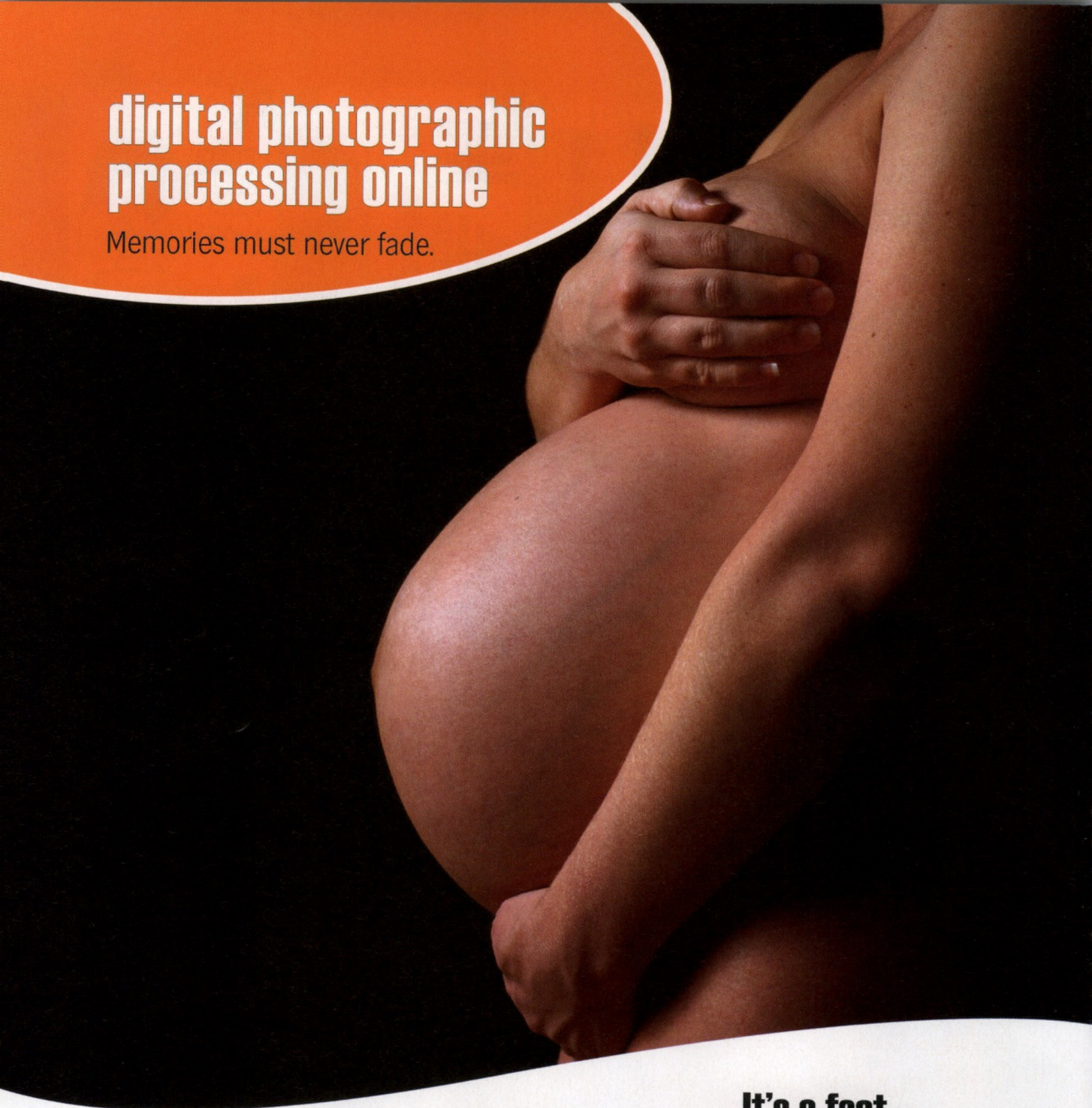

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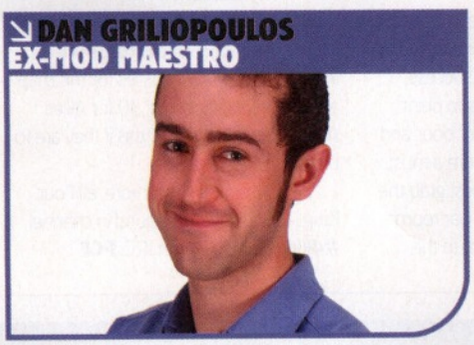


MAC-A-RAT!

We couldn't quite believe it. Normally my mail address is quieter than a sound-proofed grave (except for all the viagra spam), so when it suddenly sprang into life we were all pretty surprised. And we were even more shocked at the source of this kerfuffle: *PCFormat* readers angry about the fact that somebody had modded a case. Shock and horror!

It turns out the case in question belonged to an Apple G5, and that the modder in question had professed to gut the machine and stick in a load of PC components (without telling his parents who had just bought it for him). As soon as this got out we were bombarded by closet *PCF* Mac fans

Anyway, it all turned out to be a hoax, and no such action occurred. Which is unfortunate for the undercover Mac fanciers because Alec 'judgmental' Meer has been taking down the emailers' names for liquidation. You have been warned...

dan.griliopoulos@futurenet.co.uk

MEET THE PCFormat TEAM

ALAN DEXTER
Ah, lovely local Alan. What can you say about a man who lives in a house called Wobble Bottle Cottage? Not much, according to his lawyer.

TITCH
This month Titch has mostly been exploring the lower reaches of his keyboard, removing fluff and weaving it into heatpipes. Same as usual then.

EWAN WILCOCKS
Imagine a career dedicated to adapting the latest miniature motherboards. If you fancy doing that, Ewan's up for a job-swap any day.

WIL HARRIS
"Who is Wil Harris?" you may ask. After a whole year, now you ask? Why not before? What's wrong, shy? Out with it man, out with it!

GRAHAM BARLOW
Graham wears ankle weights around the office, he says to improve his t'ai chi. We think it's to give him those long legs the ladies love.

DOUG WRIGHT
Father Dougal has no extant convictions for firearms use, or indeed any convictions of any manner or type. Something of a problem, for a priest.

GET STUCK IN!

Oh, what a carrier-on! It's plane to sea that this PC is seaworthy, but what's going on inside?

MOD OF THE MONTH

CASE MODDING
If you think you can top this *Airfix* aircraft carrier, perhaps with a wireless Pearl Harbour, complete with to scale bad acting and Frank Sinatra death sequence, then wire us at **pcfmail@futurenet.co.uk** attaching a regular-sized image of your modded PC.

130

PLAY LIKE A PRO: RTCW

Master the intricacies of *Return to Castle Wolfenstein's* Beach map with in-depth tips from pro gaming team Four Kings' Simon Butt.

136

HARDWARE HACKS

Alan Dexter explains how to push performance from your nForce2 motherboard by tweaking a few of its vital settings.

Plus

131 4KING BRILLIANT!
Doug Wright laments the fiasco that was the Cyber X Games.

134 MODDING Q&A
Tinkering Titch teaches us tricks.

137 MODS & ROCKERS
Wil Harris spreads a little love.

138 EXTREME CUSTOMISATION
Draw the *WindowBlinds* with Graham Barlow's tutorial.

139 MINI ADVENTURE
Ewan looks at the smaller picture.

↘RETURN TO CASTLE WOLFENSTEIN

PLAY LIKE A PRO

Pro gamer **Simon '4K^Creamy' Butt** leads you through the sand-traps on the Beach map for *Return to Castle Wolfenstein*.

The most widely played map in *Wolfenstein* competitions, MP_Beach is picked because of its huge potential for defensive tactics. The defences range from extreme aggression, down on the beach attacking the Allies as they try to push for the spawn flag, to a steady upper base defence, middle defence or even falling back to the lower basement levels. Or as Americans prefer, a hardcore war-room defence orphan.

The beauty of the map is the flexibility. If the attackers have claimed the upper base, the defence can drop down the radio stairs to cover the basement quickly, as well as having the opportunity to re-claim the spawn flag, clear out the attackers and push them back to the beach. The attackers, of course, can cover the counter-attack, spawncamp, or push for the documents, depending on the situation. Teamwork and communication, as always in *Wolfenstein*, are the keys to success.

The Allies' first objective is to plant dynamite at the forward bunker door and sea wall breach, so engineers are a must. To win the match, the Allies must grab the Axis war documents from the war room in the basement, and run them to the radio room transmitter. Timing is all-important. The spawn times for this map are 40 seconds for Axis, 30 for Allies. Allies must make use of this if they are to be effective on attack.

If you're hungry for more, all Four Kings divisions can be found in channel **#4kings** on Quakenet IRC. **PCF**

>>LIFE'S A BEACH

Be careful not to get sand in your sandwiches.

ATTACK, ATTACK!

They're all over the place.

If you find yourself running out of the forward bunker into a hail of bullets, and your sniper isn't being particularly helpful on the sniper hill, bring out the heavy artillery. Get two lieutenants to spawn near Allies on the beach, and artillery the upper base. Seven seconds after the artillery has gone down, it's safe to push forward. Remember, attacking from two directions is better than one, so send men back round to the breach in safety, to attack as the artillery hits.

1 THE BEACH

The lowest point on the map, where the Allies make their sea landing. Anyone who remembers *Saving Private Ryan* will have flashbacks. The Allies must blow the bunker door and the sea wall breach to make progress.

2 BUNKER

The forward bunker door must be dynamited. Once blown, the Allies can grab the spawn flag. Send a few men backwards from here to the sea wall breach – six men leaping from the bunker doorway ain't good.

3 THE TRENCHES

Two options: attack short towards the murder hole, or go long towards the trench stairway/breach ladder. There's a jump from the flag to the grass, very useful to escape crossfire after spawning.

4 UPPER BASE

Encompasses the entire upper level of the stronghold, and is usually very heavily defended. There are three ways up. From here, the attack can push the back stairway, or run along the walkway to the radio room.

5 RADIO ROOM

The transmitter can be found at the top of the radio stairway. The radio stairs are the quickest route from the war room, taking 10 secs at top speed. Only rush short with the documents if you know it's clear.

6 THE BASEMENT

The basement can be reached from the back stairs and radio stairs, and leads to the war room. There is a sneaky route through the ducts at the bottom of the back stairway, leading straight to the war room.

7 THE WAR ROOM

Any final defence will be here. Always send two or more men to get the documents. If the Axis have their men inside, bring a Panzerfaust to fire at the ceiling – the blast radius should vapourise anyone near the entrance.

8 SNIPER HILL

A long way, but a useful position. Give your men cover as they attack the upper base with a sniper rifle, and respawn at the flag once your team's pushed into the basement. Also shoot the Axis spawn ladder from here.

24-CARAT TIP

>>KEY-BINDS

SECRET SPAWN POINTS

Create two key-binds in your config, to setspawnpt 50 and setspawnpt 100. As the Axis, spawn point 50 is the barracks above trench steps, enabling you to come up behind the enemy if they're at upper base, or run to recapture the flag. As the Allies, spawn point 100 spawns you at sniper hill (if you haven't got the flag), which makes sniping from there much easier.

TIME BOMB

Getting the attack time right.

What separates the top teams from the rest of the pack is remembering the spawn time. On Beach it is especially important. Your sniper on the hill can get the enemy spawn by looking through the windows of upper base. If you count the number of enemies you've killed, then you can plan an attack. For example, if the Axis don't spawn for 25 seconds, and you've killed three enemies, you know to be aggressive and take advantage of their weakness. Without the spawn time, you can never be sure of the best action. We recommend spawn timers, but they are only an aid.

4King brilliant!

Doug Wright exclaims, "This is an X-Games!"

The Cyber X Games (**www.cyberXgaming.com**) was to be the biggest gaming event in history. Ever. The most spectacular show of gaming prowess ever seen, and with a $600,000 prize pot. Sadly, as occasionally happens, it all went horribly wrong.

The *RTCW*, *Enemy Territory* and *Counter-Strike* tournaments were all cancelled, and the few tournaments that did get played were plagued from start to finish by bad organisation and flaky equipment.

Of the three UK *Counter-Strike* teams who turned up to the Las Vegas event, two played each other in one of seven $10,000 show matches (the show being 4K Intel vs Team AMD Gamer – 16-9 to Intel) and the third returned home fragless and poor.

The Cyber X Games is run by a father and son team, by the names of Joe and

"CXG has cited reasons for the failure of the event... But most believe the blame lies with CXG"

Chris Hill. While Joe has a number of multimillion dollar sporting events under his belt as either the outright owner or director of marketing, he has still managed to create the biggest gaming disaster to date. Followed marginally by the ill-fated ClikArena event, where a member of staff ran off with 75,000 euros of prize money...

CXG has cited lots of reasons for the failure of the event via various press releases, most interestingly "competitive organisations, venues and game publishers went out of their way to interfere with the operations of the Las Vegas event". Which the gaming community has taken to mean "the CPL and Valve got together and sabotaged our event". But most believe blame lies at the feet of CXG.

At the time of going to press, players have yet to receive prize money or refunds for their expenses, although CXG has made verbal assurances that cash will eventually be forthcoming.

CXG plans to hold four more major events before August 2004 but none will feature *Counter-Strike*.

For further information, search **www.esreality.com** for 'cxg', or send an email to **CyberXGaming@aol.com**.

4KINGS INTEL
www.four-kings.com

↘ CASE MODS

WHATEVER FLOATS YOUR BOAT...

Famed throughout the world for his Millennium Falcon mod, **Russ Caslis** has now turned his creative cranium to a more seaworthy subject.

When we featured Russ Caslis' ingenious mod based on the Millennium Falcon back in issue 152, the response from readers was great, so we were delighted when Russ got back in touch to tell us about his latest finished masterpiece, based on a model of the USS Enterprise aircraft carrier (sorry Trekkies, not the craft from *Star Trek*). As with the Millennium Falcon, this is a fully functioning PC in a toy, only this time it's rather more powerful.

In addition to a Mini-ITX motherboard running at 1 Ghz, the ship also includes a DVD-ROM drive, Firewire & USB ports, a 6-in-1 memory card reader/writer, a 4Gb hard drive and a 10/100Mb Ethernet port. The paint on the keyboard is designed to blend in with the rest of the boat, and there's a completely customised optical mouse.

Russ' attention to detail, so evident on the Millennium Falcon, has attained new levels of geekiness on this Enterprise mod. For example, one of the F-14 fighter aircraft serves as the hard drive activity light, with the cockpit showing up blue and the engines red. The runway also lights up with a sequential set of lights down the centre. Even better, the F-14 hard-drive activity fighter is removable so you can play with it, and the boat plays the US national anthem via a built-in speaker!

In an exclusive interview with *PCFormat* from his home in Silicon Valley, Russ explained where the inspiration came from. "One day while walking through a toy store I happened across a rather large, though simple, toy of the USS Enterprise aircraft carrier. After bringing the toy home, I realized that with careful planning I could fit both a Mini-ITX motherboard & a DVD-ROM into the case. The entire toy was repainted, and the electronics and lights were added. Meanwhile, the F-14s were built from simple model kits (including adding lights to one of them), and all the ports and openings for the computer bits were cut-out. Then the computer stuff was added as well."

While Russ is the first to admit that his warship lacks the firepower to play decent war games, he claims it's ideal as a home entertainment PC or just for watching movies. "This mod would make a fine addition to any living room," he adds. "Anyone up for a repeat of *Top Gun*?"

USS ENTERPRISE AIRCRAFT CARRIER ($19.99)

"This was the inspiration for the mod. When browsing through a local toy store with my wife, I came across a toy aircraft carrier that looked like it just may be big enough to house a Mini-ITX motherboard inside. She insisted I buy the toy. Isn't she great?"

HOVERCRAFT TOY ($9.99) AND OPTICAL MOUSE ($6.99)

"I originally modded the mouse to get some additional LEDs and a grey/red colour theme like the aircraft carrier itself. But it just wasn't interesting enough. Instead, I purchased another toy. I significantly changed its appearance and added the optical mouse electronics. In the end I was very glad I did."

F-14 MODEL KITS ($5.99 EACH)

"Adding some planes to the deck of the carrier was a no-brainer. Adding light to the engines and cockpits of the planes was much harder. Finding a way that the plane could be quickly removed from the desk, and then quickly returned, was even harder. Of course, the plane is only removed for play, sorry I mean for inspection (*cough*) purposes!"

M10000 MINI-ITX MOTHERBOARD ($169.99, FROM VIA)

"Well, there was simply no question when it came to this mod – the only way a computer would fit inside was using this kind of motherboard. And what a motherboard! Only 17cm by 17cm and it comes with onboard video, audio, a 1Ghz processor with MPEG acceleration! I can't wait to try the even smaller motherboards on the horizon from VIA."

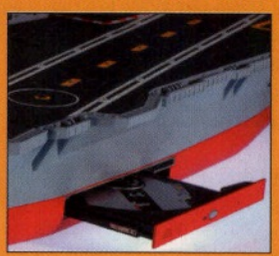
6 IN 1 MEMORY CARD READER/WRITER ($19.99)

"It wasn't enough for this mod to just have the DVD-ROM, I wanted more... Actually, adding this reader/writer was a later addition to the design, but it just made sense considering the PC's home entertainment purpose. Making a decent cut-out for the memory cards in the outside of the case was not as simple as the decision to add the device, however."

SHUTTLE 200W POWER SUPPLY (£39.99)

"I really like Shuttle's small yet beefy power supplies for my mods. Rather than relying on some external power supply and a 'brick' outside the case, this one allows me to incorporate everything I need inside the actual mod itself – much better.

DVD-ROM LAPTOP DRIVE ($15.00EBAY)



"I wanted a cool-looking DVD/media player that was also small. A little searching on eBay and one was delivered to my doorstep for a nice price."

USB KEYBOARD ($19.99)

"I bought a simple, cheap USB keyboard to complete the theme. I changed the LED colours and the colour of the keyboard to match the case. I also custom-dyed the keyboard cable to simulate the warning tape that is sometimes used to mark dangerous areas on naval vessels and a similar thing to the mouse cable."

QUICK SHOTS

More heady slugs of case modding prowess

BLUBYU

Black, gold, silver, blue: colour me mod.

This striking award winner on the splendidly named Pimped Out Cases.com site, started out as a plain black tower. As part of an extensive metamorphosis, owner Blubyu installed a side window with etched flames and an 80mm blue LED fan and clad the interior with polished fisheye aluminium.

Meanwhile, the whole front panel was fabricated using black, mirrored acrylic. The window on the right side changes colour in the dark, with the gold lettering changing to dramatic silver and the window itself glowing blue. Blubyu didn't stop at the PC either: the desk was built to match and the customised chair is wired for 5.1 surround sound, with a CD compartment in the armrest. Even the remote for the speakers is modded! Check out the web site at **http://members.shaw.ca/web56n/**.

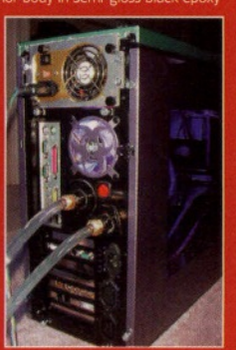
PROJECT ANGEL

Project Angel. Living up to its name – quite heavenly!

Another Pimped Out Cases.com winner, Project Angel is both beautifully executed and restrained – a true celestial being. The system is based around a Intel P4-2.26b Northwood CPU cooled by a Swiftech MCX4000 with Vantec Tornado. The case itself is a Modded Lian Li PC-60 USB cooled by 4x80mm Quad White LED Fans and Dual System Bracket Fans controlled by a Sunbeam Rheobus.

GRAFSPEE

Named after the ill-fated German battleship, the GrafSpee is a stunning case mod, with some of the most sweetly executed waterworks we've seen this side of the Plumber of the Year contest. Owner MadCow describes how the plumbing works. "You can see from the rear panel where and how my water hoses attach. Top left is incoming, and bottom right is outgoing. The hoses themselves are attached on the outside with compression nuts for removal when I'm travelling. On the bottom right there's an additional power extension in, and two additional plugs running out. The red switch provides the power for that." The case itself is a Lian Li PC 6002, originally in brushed aluminium. "I re-did all the interior and exterior body in semi-gloss black epoxy paint," MadCow explains. "It's the only kind of paint that seems not to scratch when I look at it a certain way."



GrafSpee and its winning waterworks.

↘MODDING ADVICE

MODDING HELPLINE

Titch is here with his Modfather ways, teaching us to decipher the usual confusion from disillusion when it comes to the weird and wonderful world of modding

↘TITCH

The problem with tweaking lies in the fact that it tends to create a knock-on effect. Not so long ago, I decided to fit a radiator on to the outside of my house to cool my computers with. This seemed like a good idea until I decided to see if I could get it to work that bit better, and in order to do so I fitted a new hose attachment and put a barrier in the top chamber of the radiator. Now the water has to go into the radiator, drop to the bottom, and then go back to the top to get out. It's called a two-pass radiator. This has now lowered the flow rate of my system, causing me to buy and fit a more powerful pump. The pump, however, needs wider tubing, so I now have to drill wider holes in the side of my house and rebuild my manifolds. And it all seemed like such a simple idea...

However, there's always time to answer your emails, so send them to **customquestions@themodfathers.com** and I will answer them as quickly as possible. The most interesting queries will be featured in *PCFormat*. For instant support, try the *PCFormat* forum (**http://forum.pcformat.co.uk**), with its community of experienced enthusiasts.

Stealth drives

Hidden answer

Q I have both a DVD and a CD-RW drive, but neither of them match my case. I looked at buying some covers, but they're all the wrong colour. I then saw a case in a case gallery on a website and it appeared to have no drives. How could I do that myself?
A Purkiss
mooser@btinternet.com

A You are looking for a stealth drive. The majority of stealth drives are made in two ways. The first one I covered in some detail in issue 152 of *PCFormat*, with the LAN party system I built. In this example, I fitted a secondary switch, enabling you to open the drive door remotely, which was mainly intended to stop people nicking your discs. However, if you are building a case for your home, there is a far more simple method. As before, you have to remove the bay door but this time, for better fitting, remove the fascia as well. I did not do this for the LAN ones, as, if the bay cover gets ripped off accidentally at a LAN party, you're left with exposed electrics. When at home, this is not an issue, as you can simply take some tape from a cupboard and fix it. This allows a better and smarter fitting cover. It is also worth removing the volume control and earphone socket as they only get in the way. This does require a bit of delicate soldering, but it is really very straightforward. Then, as in the previous article, you get a spare bezel and cut the mounting arms off with a dremel or junior hacksaw. Once done, you can then stick the bezel to the drive tray, using some nice strong double-sided tape.

Here's the clever bit: if you remove the plastic clip that holds the inlay in a DVD case, you can stick it to the inside of the bezel plate, level with the door-opening button. As you have used double-sided tape, you will find there is a very small amount of movement in the bezel plate that is stuck to your drive tray. Therefore, when you push the bottom of the bezel, the clip will push the drive door opening, and guess what? You got it: the door opens. This is a simple but effective way to stealth your drives to produce that sleek and matching front. There's an article on The Modfathers site (**www.themodfathers.com**) under the Modfatha section that elaborates on this, in much greater detail.

We always find that using two fingers tends to work best.

Soundcards

What's in a name?

Q I'm looking to buy a soundcard for my new system, which will be mainly used for gaming, although I also want good surround sound. I have seen a number of cards referred to as THX branded – are these what I should go for?
Robert Elvy
Email withheld

A THX is something that is increasingly bandied about these days, with very little explanation. The standard was created by George Lucas when he felt that his wonderful *Star Wars* films were being shown with such poor sound and picture reproduction that the audience was missing the intended impact. He devised a number of benchmarks and requirements to ensure that cinemas would enable people to see the films in the way that the directors had intended. As you are starting to guess, to gain the benefits of this technology, you need more than just a THX-branded soundcard.

All the components of your system, including the wire, connectors, and even the type of solder that you use, also have to be THX compliant. If you go that far, you also have to get your system acoustically tuned to the room in which it is based, and to make it worse you won't be able to move any furniture; this would require your system to be retuned. And if that's not frustrating enough, you can't do this yourself; you have to pay a specialist engineer to do it for you. THX is also not a guarantee on a specific product, so all you're gaining is some text on a box. So, don't get suckered into buying into a standard that you will never be able to utilise or gain any benefits from. You'd be better off getting a soundcard that has a low system and CPU usage and has done well in any *PCFormat* review. Any money you save will be far better invested in a finer graphics card.

>>FAZED BY PHASERS

Cooling

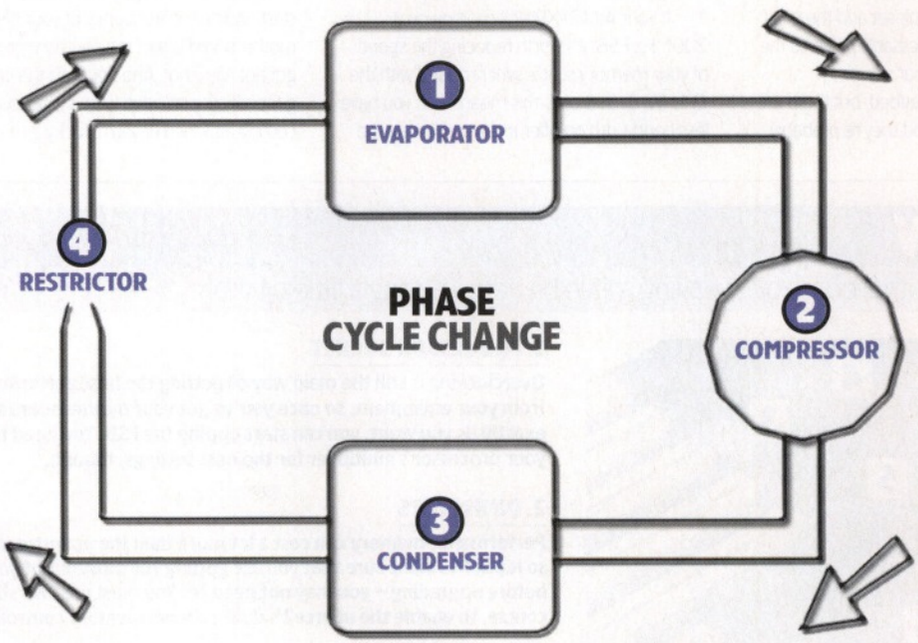
A frozen computer

Q I have seen a number of reviews of VapoChill units and have been amazed at the price and performance that people are getting. What is phase cooling and could I build a system myself?

Don Brady
brady@attbi.com

A Well, there are actually two companies making mainstream phase cooling systems: VapoChill and Prometeia. VapoChill's are very neatly put-together systems; they look great and work well. Prometeia, on the other hand, does not care about looks; its systems are brutal, extreme and cold. Both of them will set you back in the region of £500, a price which reassures you that you're getting the best of coolers. Both are based upon phase change cooling, which is the same as your household freezer unit. Let me first hit you with the basics in brief, then I will explain in a little more detail. It's called phase change because it is based upon the principle of latent heat. Latent heat is the energy required or given off when matter (solid, liquid or gas) is changed to/from another state, such as liquid to gas. This simple principle, when harnessed, is great at shifting huge amounts of heat from one area to another. In a phase change system, this is done in four phases. The first is the evaporator, then the compressor, followed by the condenser and lastly the restrictor. The basics you need to remember are that when a liquid is forced to boil and turn into a gas, it needs to grab heat, and lots of it. In the case of your CPU, to be able to continue to do this it then needs to return from a gas into a liquid again, dumping all that heat into your room. Naturally, water is not used to do this but a refrigerant, a common one being R-134A, which is nasty stuff to play with, so really don't consider doing it yourself.

Now you have an idea of how this brilliantly efficient cooling solution works, you should also understand why you don't want to build it at home. Just getting the capillary tubing right is no easy task. If you get it wrong, compressed and dangerous gases could explode in your computer. That is why you pay your money and let those who know take the risks, leaving you to buy a safe and working system.



EVAPORATOR

The important bit happens at this point. Here, the refrigerant enters the evaporator and, thanks to the sucking compressor, is now in an area of vastly dropping pressure. This forces the liquid to boil, turn to gas and soak up all the heat from the surrounding area. This area includes your CPU, which has so much heat removed that you can have a system running at -45°c.

COMPRESSOR

The compressor ensures that the refrigerant is forced around your system. However, more importantly, it creates a pressure differential. The refrigerant going into the compressor is of a lower pressure (a gas) than the refrigerant going out of it. Actually, it compresses it so much that the refrigerant shoots out and forms back into a liquid. It is now no longer in the compressor, but at the next stage.

CONDENSER

This is really just a radiator and it dumps all of the heat produced from the gas, which turns into a liquid in the atmosphere. The refrigerant is now a liquid again and is ready to soak up more heat.

RESTRICTOR

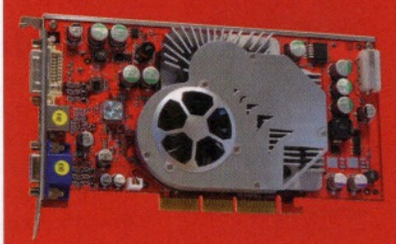
This part looks like it should be the simplest because it is only a thin length of tubing, called a capillary tube. However, its diameter and length are vital. Its purpose is to restrict the flow of the liquid to a level that means it has a high pressure on one side and low pressure on the other. It's a bit like a narrow point in a stream: the liquid enters the small tube, which increases the pressure, then as it leaves and finds itself in a wider area, this causes a sudden drop in pressure. The low-pressured liquid will now be back in the evaporator and the cycle starts again.

CUSTOM GEAR

Kit and tools that are a must for the modder.

SPARKLE FX5900XT £148 WWW.DCS-ONLINE.BIZ

There are odd times when a new product is launched, and it's an amazing bargain. In this case, it's a new graphics card based upon an old(ish) GPU. With the launch of the FX5950, nVIDIA was left with the old 5900 GPU – still a good performer, but not that good. So it cleaned it up, stuck some new features to it and launched it as a new core. What you get is a card that performs nearly as well as a FX5950, but at half the price. Yep, for under £150 you can get a mean looking card that is a real number cruncher and will play all the top-end games. The only downside is that you don't get the same clockspeeds as some of the newer cards.



TECHFLEX CASE MOD SLEEVING KIT £20 WWW.COOLERCASES.CO.UK

One of my pet hates is a well put-together system spoiled by untidy cables. Cable ties and tape used to be your only option, but not any more – you can now buy coloured braiding. With a bit of patience, this is easily the best option. As with everything, though, once the companies realise that they have hit upon a good idea, they try to make their kit just that incy bit better. TechFlex has been making braiding for years, and not only makes its kits with braiding in but has gone that extra mile and sells colour-matched cable ties and heatshrink.

ACOUSTICASE C6607B £100 WWW.QUIETPC.COM

With three computers in my living room, it's hardly a surprise that I'm a loud advocate for well made and designed PC-quietening products. This case, made by Acousti, not only looks good but comes with a great number of extras. These come in the shape of fire-resistant, vibration- and sound-killing material fitted to the inside of the case. It also has handy front ports, washable air filters and anti-vibration hard drive mounts, all housed in a solid steel case with a good-quality paint job. If you add low-noise fans, PSU and CPU coolers, you end up with a silent computer.

Check out the *PCF* forums
www.pcformat.co.uk

↘ NFORCEFUL

HARDWARE HACKS

Alan Dexter reveals how to get the most from your nForce motherboard by tweaking memory settings, improving cooling and using different drivers.

24-CARAT TIP

>>DIY DRIVERS

THE PICK OF THE CROP

Morpheus puts in a lot of time selecting the best combination of drivers for his packages, scouring websites trying to find leaked beta versions of drivers to include. Because nVIDIA is erring on the side of caution with its nForce drivers, this can mean that the drivers included in the Morpheus packages are even more recent than those available on nVIDIA's website. While such drivers should normally be treated with caution, if they pass the Morpheus test, they're worth investigating, and he generally makes such drivers available for separate download too. Check out **http://envynews.com/index.php?ID=626#A** for the latest versions.

While chipsets from other manufacturers are closing the gap on nVIDIA's Athlon XP solution, the nForce2 chipset is still the silicon of choice for any serious user. But we know that having the fastest chipset around isn't enough for you – if you really want to get the best performance from your motherboard, you're going to need to discover its darkest secrets. Which is where we come in.

nForced memory

There is a fair amount of conflicting information about the nForce2 chipset, especially when it comes to getting the most from the memory subsystem. It's worth finding out all you can though, as nVIDIA has put a lot of work into that particular part of its chipset and the most obvious settings don't necessarily produce the best performance from your setup.

Experimentation is needed, but there are certain goals to aim for, and they're probably not what you think. In theory, and using the best memory that money can buy, you would expect to be aiming for 2-2-5 memory timings, although after testing such hardware, we discovered that you would be better off aiming for 2-2-11.

Of course you're going to need to splash out on specific branded performance memory in order to reach these exacting timing figures. Such memory is expensive, and to be honest the performance increase can be nominal if your current memory is reasonably fast anyway. This is why it always pays to experiment with different settings in your BIOS. Try setting the memory performance to specific values instead of relying on the SPD settings for starters.

If your Athlon XP isn't running on a 200MHz FSB, it's worth reducing the speed of your memory so it is synchronised with the CPU. While in theory this means that you have less bandwidth on offer, it can mean that the latency is improved, which equates to faster overall performance. This is why it isn't enough to just check the performance of your memory subsystem with *Sandra's* memory benchmark; confirm the difference with something like *3DMark 2001* SE as well.

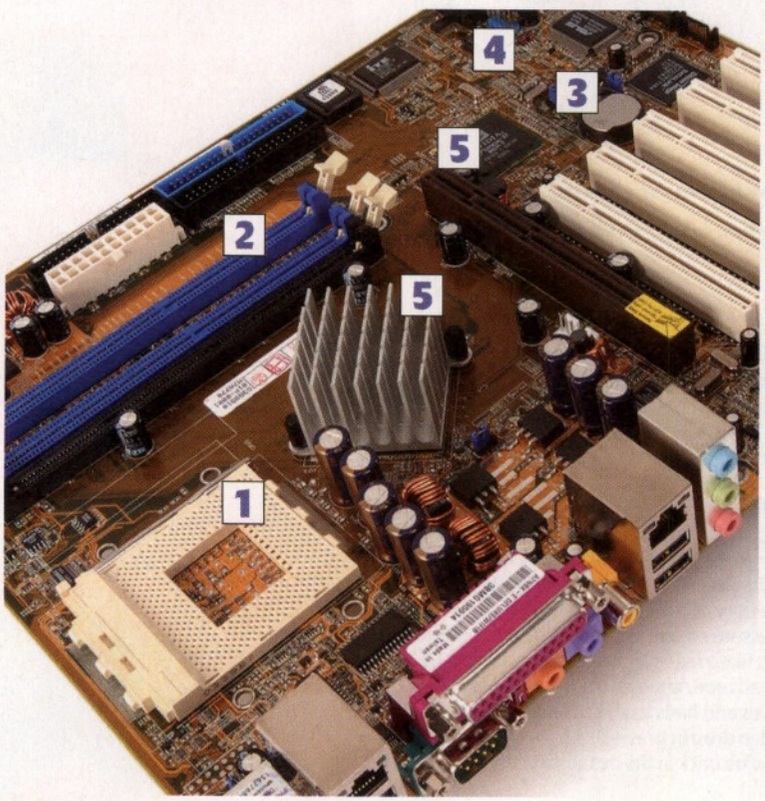
Use the nForce

Of course, one way of speeding up the performance of your motherboard is to overclock the processor. Several users have managed to get fairly stable operation from their chip by running the FSB 20MHz or so higher, which can equate into a sizeable performance increase with multipliers being so high.

One thing that you will discover once you start upping the frequency of your nForce2 motherboard is that the southbridge can get hot. Very hot. And because this chip generally doesn't ship with any serious kind of cooling attached (if you're lucky, it may have a

>>EXPLODED VIEW

Get the most from your *nForce2* motherboard by tweaking a little bit here, moving a little bit there...



1. PROCESSOR SOCKET

Overclocking is still the main way of getting the best performance from your equipment, so once you've got your motherboard set up exactly as you want, you can start upping the FSB. You need to unlock your processor's multiplier for the best settings, though.

2. DIMM SLOTS

Performance memory can cost a lot more than the mainstream stuff, so it pays to make sure that you are getting the most out of yours before upgrading – you may not need to. You must use two sticks, of course, to enable the nForce2's dual-channel memory controller.

3. CMOS BATTERY

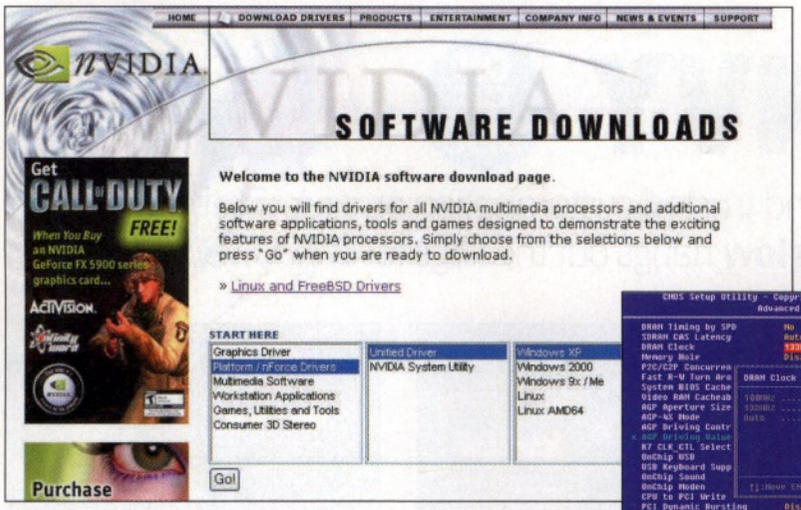
If you overclock your machine too far and you find you're having problems booting, clearing the CMOS is the only way forward. There should be a jumper next to the CMOS battery, or failing that just pop this silver disc out of its housing for a while.

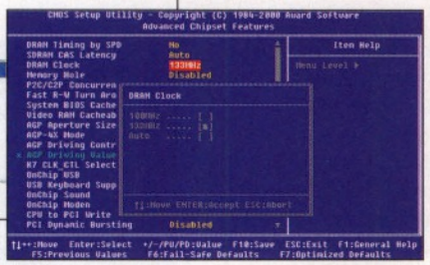
4. THE BIOS

Modern BIOS chips are huge monsters that need taming if you're going to get the most from your motherboard. For starters, try turning off any integrated features that you don't use, and then make your way over to the advanced chipset features screen. Leave no option untested.

5. CHIPSET COOLING

While most modern motherboards ship with some kind of cooling on the northbridge, few boast active cooling on the southbridge. While this is fine for normal use, you'll want to beef up the cooling if you intend to seriously overclock your motherboard.





While nVIDIA's official drivers should still be your first port of call for mainstream use, the Morpheus remix packages can offer better performance.

passive heatsink), this problem can lead to break up of audio, or simply make your machine incredibly unstable.

One of the neatest solutions to this problem is to transfer the heatsink and fan from the northbridge to the southbridge and then slap a much bigger cooler on the northbridge. This improves the stability of both chips, and enables you to reach higher frequencies with your overclocking.

What is the Matrix?

One final area that you can experiment with to get the most out of your motherboard is on the driver front. Thanks to its experiences in the graphics industry, nVIDIA has a team of software engineers constantly improving and perfecting its drivers. Such after-sales support isn't without its problems, though, and while the majority of tasks should work, certain capabilities may be affected, or performance hampered, by a new driver upgrade. In an attempt to sort out such problems and performance issues, an industrious character called Morpheus, has assembled a series of driver packages that provide an alternative to the official releases. These packages actually use nVIDIA's drivers, so don't worry about installing something dodgy on your machine. What Morpheus has done, though, is collect together the various system drivers so that one pack offers the performance, another the best reliability, while other packages have been designed to solve specific problems. See **http://envynews.com/index.php?ID=626#A**.

One important point about these drivers is that some of the files in the package are older than the ones already on your machine, which throws up a warning as you install them. In order for these packages to work properly, you should elect to overwrite each time you are asked, just to make sure. It is worth noting, however, that some users have experienced problems with the SW IDE driver, so it pays to show caution with this particular option. **PCF**

If you want to get the most from your machine, get to know your BIOS, particularly the sections that deal with the memory settings.

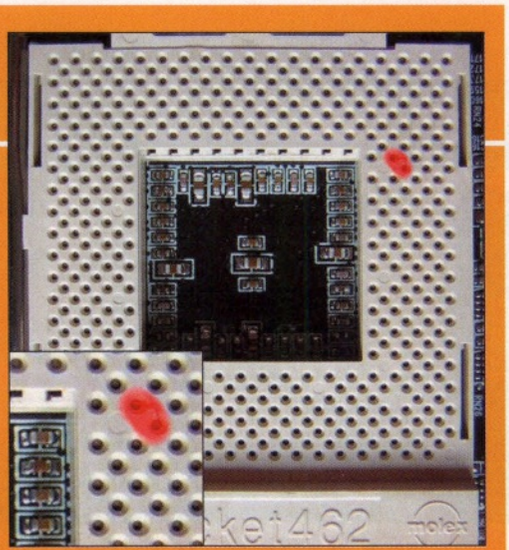
PIN SHORTING

Multiplier lock bypassing the easy way...

It's a fairly well known fact that you can bypass the multiplier lock of AMD's processors by altering the state of the bridges on the packaging. And while we've covered this process before, the fact of the matter is that only a select few overclockers have actually done it because it's undeniably an irritant.

While there isn't really an alternative if you want total control over the processor's multiplier setting, a different way of achieving a similar effect has come to light recently that is a lot more straightforward to initiate. The idea behind this new method is to use fine pieces of wire to bridge the connections in the actual socket. When you then slide your processor into place, a short is made and you can change the processor's multiplier in the BIOS.

Obviously, you have to get the wire in the right holes, and you need to find a suitably small piece of wire, although, thankfully, it is a lot easier to do than the old method. The best wires to use are the extremely fine wires that are twisted together in old IDE cables. These are very fine, and you should have an old cable lying around that will do the job. Take a good look at the image above to see which holes you need to span with the wire, making sure you get the right ones. This will enable you to set multiplier settings all the way up to 12.5x.



Mods & rockers

Wil Harris' sensitive side reveals top tips for a PC Valentine.

As I write this, it's February, the month of Valentine's Day – scourge of men across the country. Thankfully for you, by the time you read this the tears will have dried and the 14th will be but a distant memory (unless you really ballsed up). Was this year the same as usual? Did you find yourself frantically running around town, 5.30pm on the 13th, trying to find something vaguely appropriate for your better half (or at least trying to remember their underwear size)?

I know why we do it: because we like to show that certain someone in our life that they're special to us. But the method of that expression is perhaps a little bizarre. Why

"Why not plan early for next year and mod a case for your partner?"

don't we show them how special they are by doing something that we're ace at, rather than making a feeble effort at something we might never have a hope of getting right?

OK, so it's a weak link, but why not plan early for next year and mod a case for your partner? PCs are hardly romantic, agreed, but I bet your other half enjoys using theirs.

First mod your desktop. *PCF* has run a series of articles about this over the last few months, so you have no excuse! Create a custom wallpaper (maybe of the two of you on your last holiday) and change the screensaver to a slideshow of your snaps, or a message saying how much you love them.

Then you're getting on to the hard stuff. What's your partner's favourite thing in the whole world? For instance, if you're modding for a girl, what are her favourite clothes labels, books or films? For guys, what's his favourite football team or band? Go to town and create a mod based around that, and create something that will be truly unique. Make sure you put a lot of effort in and, perhaps more importantly, make it look as though you have, too. Add some finishing detail, maybe a bar of chocolate on top, and I can (almost) guarantee you a pain-free Valentine's Day in 2005.

WIL HARRIS
http://bit-tech.net

EXTREME CUSTOMISATION

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>>NEW LOOK

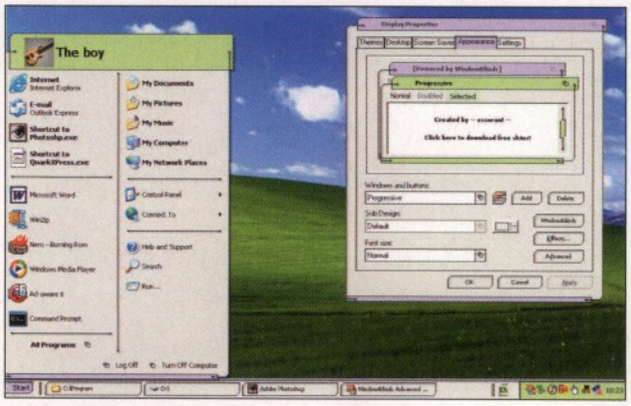
CREATING SKINS

You might like to consider creating your own skins for *WindowBlinds*. And if you have good knowledge about programs such as *Photoshop*, it should be a doddle. Documentation exists on **www.windowblinds.net** about the UIS Language used to create skins. There's also a powerful and easy to use graphical skin builder called *SkinStudio* at **www.skinstudio.net**.

A new version of a tried and trusted customisation program is always reason to celebrate. **Graham Barlow** hangs out the flags for *WindowBlinds 4.2*.

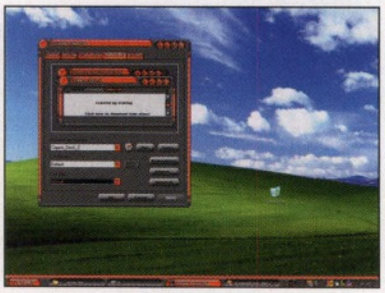
Although *WindowBlinds* is one of the oldest programs for customising Windows, thanks to an active development team, it never seems to get beyond its sell-by date. And as an example, this elder statesman has just been brought bang up to date with a brand new version 4.2. You may have used *WindowBlinds* before and think you know all you need to about this program, but we hate to say you'd be wrong. Version 4.2 has some neat features that are definitely worth a closer look.

WindowBlinds enables you to customise your entire Windows interface into something with a touch more style than your sanatised MS look. You can use it to add skins to Windows that change the graphics it uses for the toolbar, Start menu and all window borders into space-age effects. In fact, it works so well that Touchstone Pictures even used *WindowBlinds* for the computer interface scenes in its recent Colin Farrell vehicle, *The Recruit*, when Mr F was required to look as though he was using a bespoke military system, rather than a normal Windows PC.



If you're a prog rock fan, you'll enjoy Progressive skin better than a 20-minute drum solo.

Houston, we have a problem. The Apollo skin harks back to the golden era of space exploration and, er, cock-ups.



The Copper Deck 2 theme provides a sturdier structure. And as a bonus, it also reminds us of our central heating system.

WindowBlind drunk

If it's good enough for Hollywood, it's good enough for you. And the new version has two features that are, in particular, worth a look. Firstly, it can replace the animations Windows uses to show progress dialog boxes – you know, the sort of box that appears showing a progress bar creeping all the way to 100 per cent, millimetre by millimetre, when you try to do something foolhardy such as send a 2Mb attachment on a dial-up connection. While *WindowBlinds* doesn't speed things up, at least you can have something a little nicer to look at from now on.

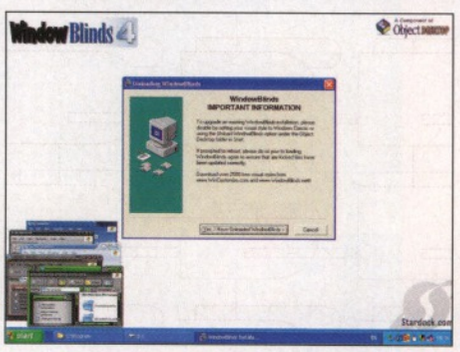
Secondly, it can replace your toolbar icons in *Internet Explorer* and the normal Windows Explorer file-browsing utility. This clears up one of the most annoying problems with programs that skin Windows – namely that it all looks very convincing until you fire up your web browser, and then it starts to look as though you're back in normal Windows again.

Shareware shenanigans

You can download the latest version of *WindowBlinds* (version 4.2) from **www.windowblinds.net**, or simply install it from

>>OPEN WINDOWBLINDS It's time to change your Windows from boring to storming.

01 **INSTALL** If you already have a version of *WindowBlinds* installed, you need to uninstall it first. Right-click the *WindowBlinds* icon in your system tray and choose the **Unload** option that appears. Once you've done this, click the **Yes, I Have Unloaded WindowBlinds** button on the *4.2* installation screen.

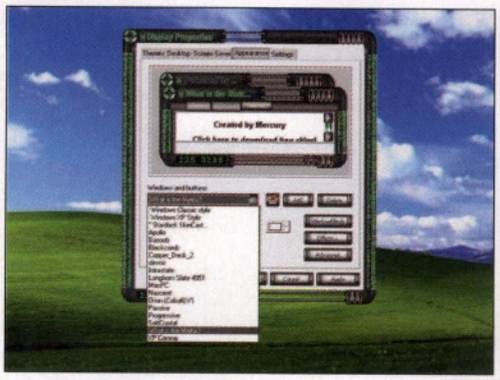


02 **SETUP** Now you have to set *WindowBlinds* up. You'll see a screen like this one with the What is the Matrix? theme installed by default. The screen you are looking at is the **My Skins** settings. Use the slider along the bottom of the screen to select a different skin, and it is previewed in the main window.

03 **SKIN IT** Click **My Toolbars** and select a toolbar setting you like the look of. You'll notice that the **My Animations** settings are only available for registered users, and you can set up individual skins for individual applications by clicking the **Per Application** settings. In **My Skins**, click **Apply this skin now**.

>>TWEAKING WINDOWBLINDS

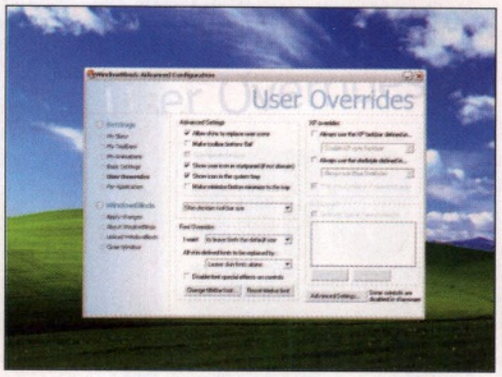
You'll be amazed by how much you can do with *WindowBlinds*. Look here!



01 **OPTIONS** To access your *WindowBlinds* options, you need to right-click the desktop and choose **Properties**, then click **Appearance**. To switch skin, choose a different one from the **Windows and Buttons** drop-down list. To access more options, click the **WindowBlinds** button.

02 **MORE SKINS** This loads up the **Advanced Configuration** panel. If you want to get hold of more skins for *WindowBlinds*, click the **Install skin from web** button and your browser fires up. You can then choose a skin from the website to install and use.

03 **SETTINGS** If you want to tweak the way *WindowBlinds* works, click the **Basic Settings** tab. Here you'll find all sorts of options to play around with that affect appearance. For instance, if you don't want the skin to apply to the **Start** menu, you can specify that here.



04 **CUSTOMISATION** If you click **User Overrides**, you'll find some great customisation features tucked away; you can make all your fonts 10 per cent, 20 per cent or up to twice as large, for example. You can also stop the *WindowBlinds* icon appearing in your system tray.

this month's coverdisc. The software runs on all versions of Windows, except NT and 95. While the new toolbar settings we mention are available in the free shareware version, you need to register the shareware version to access the progress bar customisation features that we've talked about. Registration costs just $19.95.

Installation of *WindowBlinds* is pretty straightforward, but there's still a bit of setting up required – see our walkthrough opposite for more details. Once you've installed the program, you can use the normal **Display Properties** dialog box to activate it. Simply right-click anywhere on the desktop and choose **Properties**, then click the **Appearance** tab. In the **Windows and Buttons** drop-down list, simply select the skin that you'd like to apply.

It goes without saying that there are lots more *WindowBlinds* skins available for download than just those that come with the program. Try the links we provide on the right if you're looking for more skins. Now you've installed *WindowBlinds*, you can wave goodbye to boring Windows for ever. **PCF**

WEBSITES

WindowBlinds skin websites.

Customize.org
www.customize.org

WinCustomize
www.wincustomize.com

Skinbase.org
www.skinbase.org

Skinplant.com
www.skinplant.com

Stardock.net
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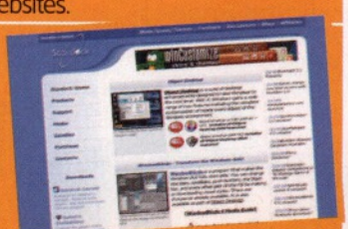

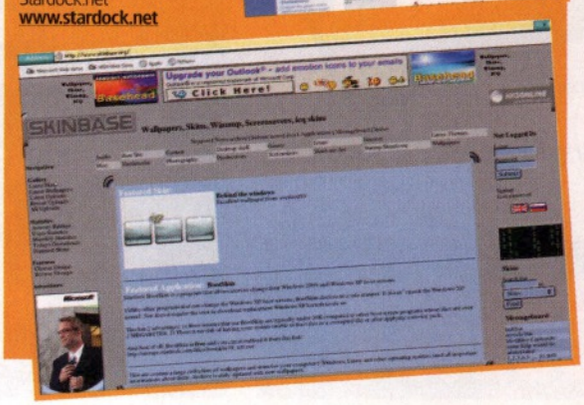

Mini adventure

Ewan Wilcocks of Mini-ITX.com becomes a multimedia mogul.

Wee motherboards need wee cases, and Mini-ITX cases can be very versatile, and very quiet. Pizza box-style PC cases nestle nicely under the TV where olde worlde VCRs and DVD players currently lurk, and with the addition of a compatible tuner or PVR card, you can create your very own multelemediaphotimeshiftingtunerpc. Delve further, and there are many Linux distributions created specially for home theatre PC use. The open source natural selection process has thrown up two very capable products – *Freevo* (**http://freevo.sourceforge.net**) and *MythTV* (**www.mythtv.org**). *Freevo* is more playback orientated, and *MythTV* is more PVR based; different approaches to the same idea. Both are continually updated, and eminently tweakable. Neither are quite 'download and go' (yet), but with a little time and effort, a personalised interface to your multimedia collection can be yours.

The low power consumption of Mini-ITX boards makes them ideal for mobile use, powered by batteries. It'll be a while before we see a robot sign for Chelsea, but check out the Robotica project on Mini-itx.com to see pictures of an early robot football team.

With suitable voltage regulation and protection, a woolly 12V vehicle power supply can power a Mini-ITX and LCD screen to provide PC functionality on the move. There are several car PC projects on the website already, and we certainly expect to see more.

Or why not let your PC take the wheel? The DARPA Grand Challenge is a 250-mile cross-country race of full size vehicles between Las Vegas and Los Angeles, which first took place this March – one of the teams has a Mini-ITX doing the driving.

This isn't a moving robot, but it sure looks cool. It was created by a German automotive assembly robot company from its parts bin. We for one welcome our new robot overlords.

EWAN WILCOCKS
www.mini-itx.com

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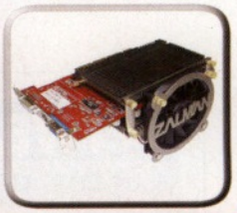

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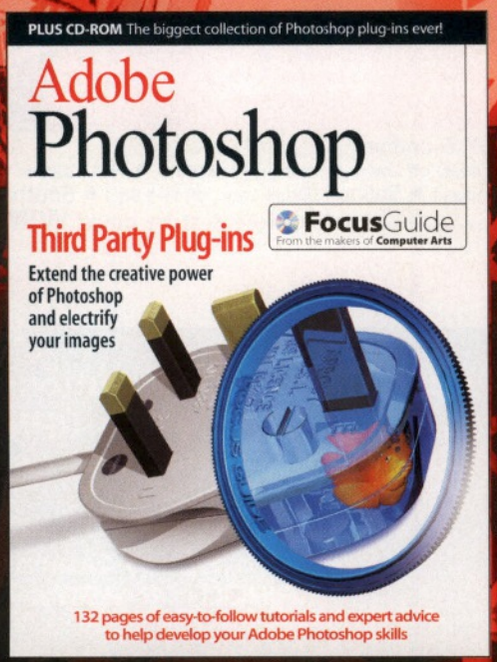
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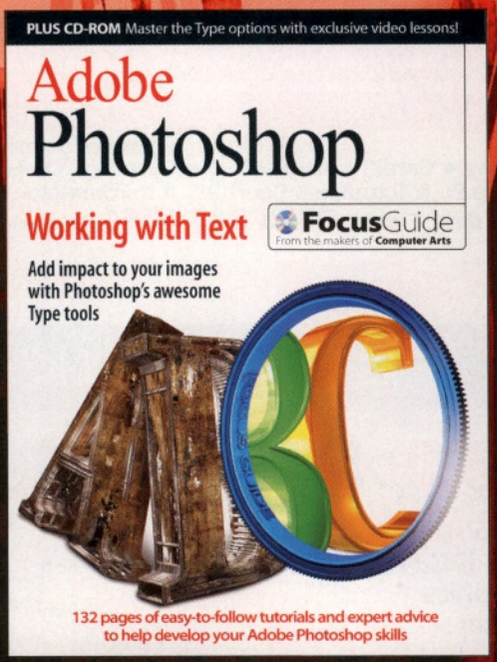
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CONTENTS SUBJECT TO CHANGE

Gamemaker

Modding/Creating/Modelling/Mapping Get more from games!

DAN GRIL MODDING SUPREMO

SWON DIVE

Goddamnit, you're giving me grey hairs! This Gamemaker thing just keeps getting bigger – next month we're shooting up to a massive 36 pages in a special supplement, and my follicles can't cope with such a throughput of editing packages. Hopefully, the exclusive *Far Cry* editing tutorial will act as a digital Grecian 2000 – how to make your own maps, indeed your own game, using the power of the highly flexible *Cry* engine. We've also interviews, developer profiles and news on the latest mods, all bound in a glossy supplement.

Meanwhile, this month we have the excellent *Secret Weapons Over Normandy* tutorial. From the makers of *TIE-Fighter* and other classics, this arcade flight sim is surprisingly straightforward to map for, as *3D World* and Razorworks alumnus Neil Rennison demonstrates. Richard Cobbett takes his *Unreal 2003/2004* tutorial up a notch, with a look at experimenting with static meshes; over in the world of *The Sims*, Riane Lim has an in-depth look at skinning, and the full version of *Games Factory Pro* rounds the section off.

All of these are accompanied by the usual plethora of disc-bound elements, and will be continued in next month's even-larger Gamemaker. We spoil you, really...

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MODDING MANIA

More mods than a Vespa gang and more editors than a local news conference – what more do you want?

SECRET WEAPONS OVER NORMANDY

Neil Rennison chops about LucasArts' action flight sim. **p.156**

UNREAL TOURNAMENT

Got the basics? Award-winning journalist Rich Cobbett goes through the next steps in editing *UT2003* by experimenting with static meshes.

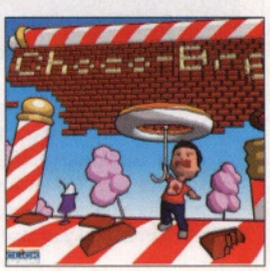
THE SIMS: SKINNING

Nothing nasty, just plain old Sim fun as Riane Lim shows new modders all the tools and necessary steps in skinning for *The Sims*.

Plus!

154 GAMES FACTORY PRO

A masterful game-making program, with walkthroughs created by the people behind the software.



MAKING WORLDS

UNREAL TOURNAMENT 2003

PART TWO In our second instalment, the generally immobile **Richard Cobbett**, takes a good look at similarly static meshes in an attempt to begin mapping out the future of level design.

Making your own levels for *Unreal Tournament 2003* is a blast.

TRIPPING THE LIGHT FANTASTIC

Learning about levelling your lighting.

01 TOKARA FOREST
Good lighting is essential, and few do it better than Tokara Forest. Note the glowing effects on the lanterns, the particle effects lifting up from the teleporters and the shafts of light bursting through the trees. Replace these with default lights, and you lose the atmosphere.

02 ANTALUS
Antalus is also open-air but takes place in a very different atmosphere. It uses a moody orange instead of blue sky, and the effect is continued in the direct lighting, giving the map a smooth sunset feel and a more interesting look than simply slapping down a set of generic cloud textures.

03 ICE TOMB
Ice Tomb is an example of a totally different style of design – using one colour and differentiating areas almost purely with texture detail. The harsh lighting glinting off the ice crystals and frozen corridors plays a big part in keeping the result both good looking and playable.

Last month, we used the *Unreal Editor*, also referred to as either *UnrealEd* or *UED*, to build the most basic of levels: two rooms, joined by a corridor. Even this simple example exposed how finicky it can be to get started with level design – making sure that everything lines up correctly, managing your scale so that players are neither bopping the ceiling every time they jump, nor running through the kind of corridors and scenery last seen in *Land of the Giants*. The good news is that this month things are both easier and more professional looking.

We're looking at the world of static meshes, with which you can simply click advanced pieces of scenery together into entire maps. This is how *Unreal's* designers came up with such advanced architecture as the Egyptian statues lying around many maps, the smooth, rounded walkways in maps such as DM-Plunge and all the little lights, fans, spiky bits and wall-computers that do so much to break up the corridor pounding in even the simplest of levels. Each comes fully textured, remains editable, and can easily be dragged and dropped anywhere. *UT2003* comes with a huge collection to play with, and you can quickly make others – provided that you don't mind skimming through external 3D packages (and occasionally banging your head on convenient bits of real-world scenery).

Getting the right mood for your new level is essential.

While we're sticking inside a single room in the interests of simplicity, by the end of this month's tutorial, you'll have everything that you need to begin producing much larger maps, simply by carving out areas and scattering around static meshes. Remember, however, that the more you add, the more *Unreal Tournament* has to draw – try to stick with just what you need to get the effect, and your completed map will be much more playable.

Next month, we'll be looking at how to make your areas a touch more interactive via Movers and, of course, begin working a few actual enemies into the mix... **PCF**

Make an atmospheric level and people won't be able to keep away.

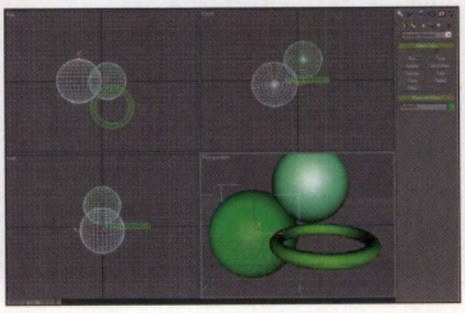
"You mustn't mind skimming through 3D packages (and banging your head on convenient bits of real-world scenery)"

CUT-PRICE CREATION

Making models for under a dollar a day.

01 3D PACKAGES

There are plenty of 3D modelling packages available on the net, which are capable of creating anything from a simple static mesh to an entire animated character – but don't underestimate the difficulty of doing so. Low-polygon 3D modelling is just as challenging as more advanced projects.



02 GMAX

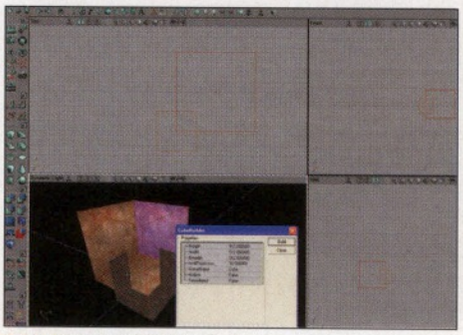
***GMax* (www.discreet.com) is the games development focused free edition of *3D Studio MAX*. It's not directly supported by *UnrealEd*, but there are work-arounds. Its big brother is likely to be more expensive than your PC, so for most work you'll be forced to experiment with the likes of...**

03 MILKSHAPE 3D

Milkshape 3D (www.swissquake.ch/chumbalum-soft/) is one of the best loved tools in the mod community. It's capable of working with just about every major game's engine. Needless to say, expect a serious difficulty curve if you plan to make use of it.

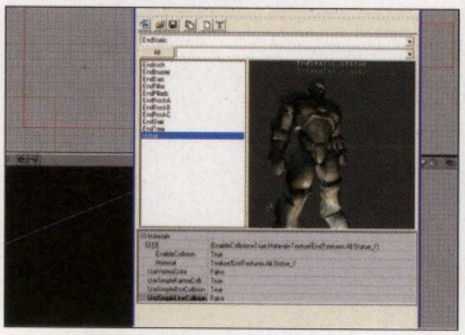
EXPERIMENTING WITH STATIC MESHES

Trial is the name of the game.



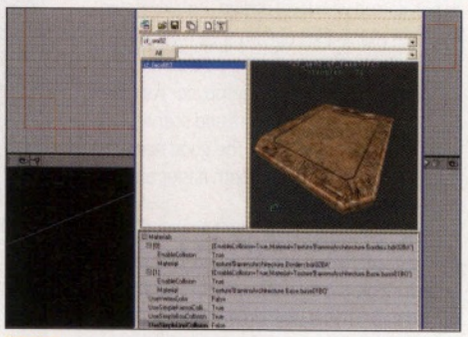
01 BRUSH STROKES

There are three principle types of brush in the average *Unreal Tournament* map. The first is the **BSP** – the straight carving out of objects from null space that we used last month. This is by far the easiest way of creating large areas, and you can mix and match these 'primitives' to create complicated objects. But be careful: the more you use, the more complicated your map will become.



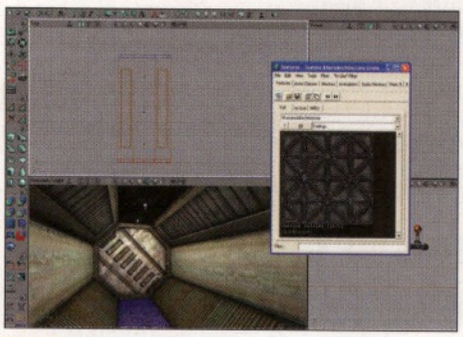
02 MESHING AROUND

The solution is to use what we refer to as a static mesh. These are full 3D models created in external packages, usually the powerful, but apocalyptically expensive, *3D Studio MAX*. The obvious advantage of these is access to much more powerful tools, and thus more carefully designed items – but their real power is speed. A static mesh will whip a BSP equivalent any day of the week.



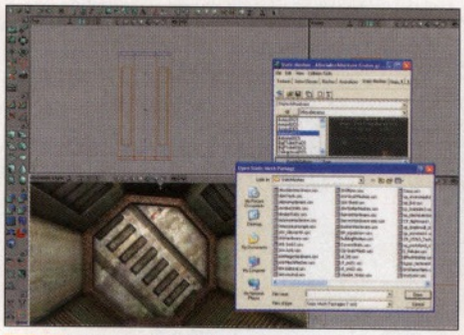
03 DEWEY SYSTEM

More importantly, a static mesh, living in your library, can be used and re-used very easily. You can create that perfect balcony once, then drag and drop it into position whenever you want to use it – retaining all of its texture information, or editing it to fit into your existing level. Unlike regular brushes, *Unreal* doesn't insist that they fit perfectly – giving you even more leverage.



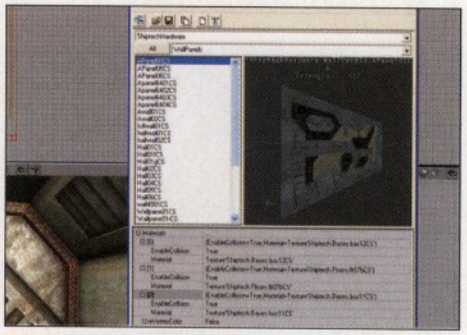
04 CIGAR CASE

Meet our sample room for this month. Without even checking the scale, it's clearly big, empty and quite insanely bland. We could add extra detail by adding a few more primitives – as we've done here to round off each end of the tube – or by adding special effects (as we'll be doing a bit later on), but it's clear that more will be required to make it a potentially interesting area to walk through.



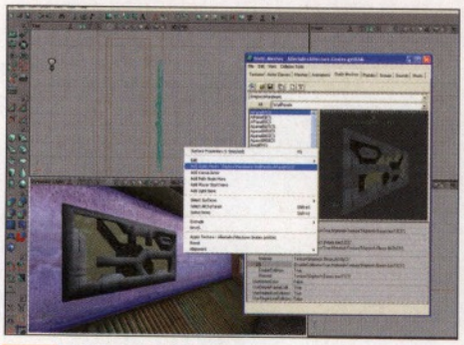
05 FINDING MESHES

Open up the **Browser** window. We used this to select textures last month, but this time around we want to access the **Static Mesh** tab. Select this, followed by **Open**. *Unreal Tournament 2003* comes stacked with reams and reams of packs to choose from, but we want to pick **ShipTechHardware** for now. This offers a number of metal related toys to play with, and should fit straight in.



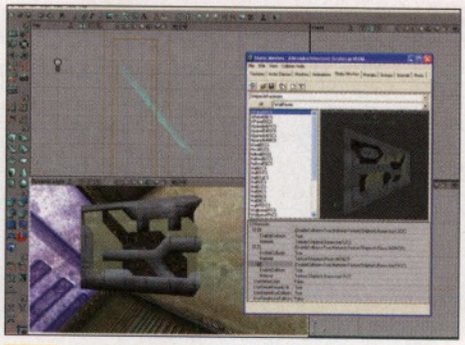
06 GROUPING UP

Each static mesh is grouped into a number of characters, such as **Pillars**, **WallPanels** and **Lights**. You can see a preview in the small 3D box, although you may have to move the camera around to get a good look. Underneath this is a range of commands to customise exactly what textures should be applied to the item and whether it should have any karma (physics, in other words) applied.



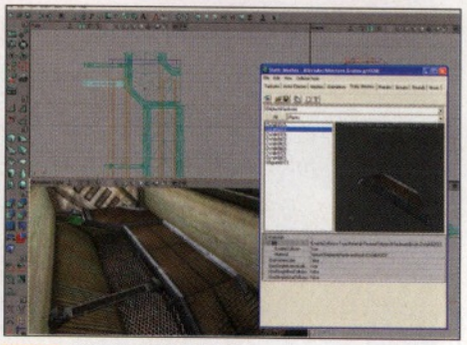
07 ADDING DETAIL

To add a static mesh, select it from the **Browser**, right-click where you want it to level and choose **Add StaticMesh (whatever)**. Move it into the exact position you need, using the standard controls. If you don't see anything appear, it's likely because the mesh is only one sided. Rotate it 180° before positioning.



08 NO CLIPPING

A static mesh can go anywhere. This sticking-out look may not be much use in a real map, but it's not going to break one either. If you have a balcony with long struts, you can slot them through a solid wall without *UnrealEd* complaining. Try the same thing with a BSP brush, and you're in for serious difficulty or very jarring map edges.



09 CLICK AND PLAY

Apart from the tunnel itself, everything in this picture was constructed using the static mesh collection in **ShiptechHardware**. The floors click together seamlessly – both the regular texturing, and the special effects, such as see-through grating. For a custom touch, we've press-ganged another type of walkway into service as a strut.

ADDING DETAIL

You've started, so you'll finish.

10 TRAINING DAY

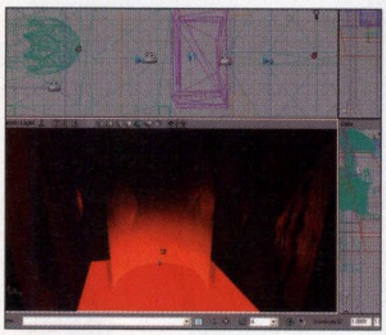
Right from the first map, static meshes are responsible for a level's detail. Try creating anything as complex as those handrails by using standard brushes. By using meshes, it's little more complicated than playing with Lego (if you're building deathmatch arenas out of Lego, and who among us can honestly say we haven't?).

11 INTO THE INFERNO

Take a look at this level, and what sticks out the most? Hint: look for the burning eternity with the heat of a thousand suns. It's that bit just behind the tower thing. *Unreal* maps aren't restricted to corridors – but how do you go about creating epic vistas like this, without building everything in massive rooms?

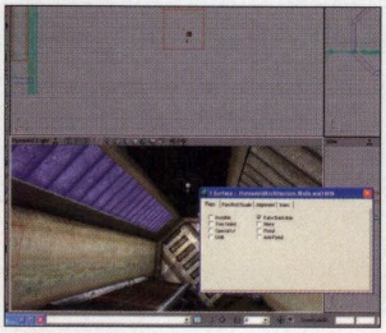
12 MEANWHILE, IN HECK

Well, we can soon find out. *UnrealEd* can open up any of the maps provided with the main game for us to have a poke about in, and this one goes by the name of DM-Inferno. We have a bit of visual trickery going on here. We are indeed in a really big room – but behind the hills is just one big flat surface.



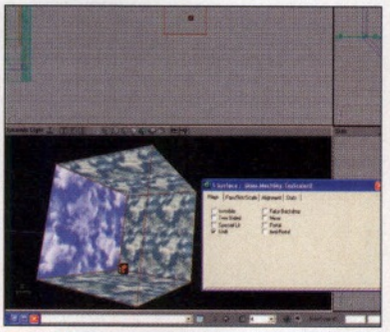
13 PERDITION'S FLAMES

That background is a skybox, and this is what it really looks like. Effectively, you create a little room outside the main level and drop the SkyZoneInfo in the middle. This is automatically wrapped around your level to give an even bigger impression of scale, and can contain animation (such as flames) or additional props. Let's build one for ourselves...



14 WINDOWS 1.0

Back to the corridor. We've selected the back of each indented panel, and brought up their Properties using the right-mouse button. To assign them to use the skybox, we click Fake Backdrop from the options. We don't actually see the effect of this in the editor. It's often worth choosing a bright-texture to remind you what they are.



15 SKY'S THE LIMIT

A skybox doesn't have to be a box per se, but that's the most conventional form. We've just made a very simple one here by subtracting a cube from the great beyond and slapping clouds on the side. Set each side to be unlit unless you want to play around with graphic effects, and make sure they all line up. Get it wrong, and the effect won't work inside the level.

16 LOOKING OUT

We know that we're in a tight cigar tube of a level but the player sees a tunnel through a much larger universe. *Unreal* works out what it needs to show for the skies and draws it – but you must provide enough space to build entire structures if you plan to let your player walk around.

17 GRATE ESCAPE

By layering these components together, you can quickly develop almost any area. There are regular brushes for your layout, static meshes to add detail and skyboxes to provide depth. We've added a grate to our view by slipping a textured sheet over the window.

18 SHADY BUSINESS

We've changed the lights slightly. This helps to remove the harsh default white light in favour of a warmer orange. We'll be coming back to lighting in the future, but for now, it's best to use blues if you want cold, interior locations, and oranges for more comfortable interiors.

GOING BEHIND THE SCENES

The parts of the level that the player doesn't see.

Unreal doesn't necessarily work as it seems. For starters, most static brushes aren't solid. In our main tutorial, we hop down on to a platform and run around with ease, but there's no point dealing with direct collision detection on a more complicated statue or other such object. In those cases, we wrap a bounding box around the item for the sake of convenience.

Other important elements of a level, such as AI scripts (what, you guessed that already?) are wrapped up with little icons like this. Apples are used to denote path nodes, which give the bots a way of getting around the level, lightbulbs – as we've seen – are light sources, and there are many others, from ambient sound generators to player start points to remember.

Luckily, most of the main objects play a starring role as themselves. This makes it much easier to move a rocket launcher into just the right position, or offer a tantalising peek of an ammo bag on the crest of a hill. As with the more general options, it pays to know what everything is at a glance – but you soon learn to tell your biorifle from your pulse core. And more.

DON'T MISS PART 3 OF 4 NEXT MONTH

Give your Sims a whole new lease of life with a complete makeover.

ON THE DISC

↘ TWEAK YOUR SIMS

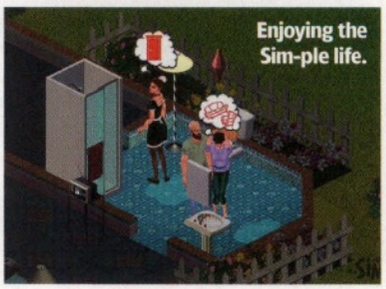
SKINNING THE SIMS

Riane Lim plays god and explains how to make your own skins for *The Sims*.

PART ONE

That is it! You're sick and tired of Bob sporting that old, ratty T-shirt every single day. Betty isn't going to make it into *People Magazine's* best-dressed list any time soon, either. The couple's toilet leaks, none of their furniture matches, and worst of all, Bob, Betty and the maid, Bridgette, have been trapped in the bathroom for so long, the couple have started peeing in their pants. Being the merciful sim god, that you are, you rev up the bulldozer and put an end to their miserable existence. But which family will you play with, now? The Goths? The Roomies? You need fresh blood. You open your web browser and go on a downloading frenzy, much like going to a Manalo sale, with 95 per cent off everything. Still crazed with greed, your internet provider knocks on your door and pleads mercy. Mercy? Your eight-gigabyte downloads folder cannot keep your Sims in the lifestyle they deserve. How can you be a generous sim god if you cannot bestow everything the Rosebud money cheat can buy for your Sims? Your internet provider slinks away and gives you five hours to get your Sims everything they need and then they will pull the plug. You are a hysterical mess. What can you do?

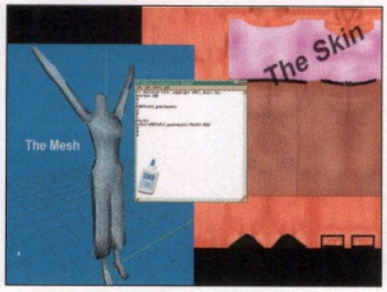
For starters, you can begin by making your own skins and objects. You can put all those state-of-the-art paint programs on your PC to better use, other than removing those embarrassing acne marks from your school snaps. The biggest fear most people have about making skins and objects is their lack of artistic training for such an endeavour. But don't worry – it isn't as difficult as it seems. You can fake your way through skinning and object making with a decent paint program and a few other user-made programs that are easily downloaded, for free, over the internet (we've put a few on the disc for you). This tutorial focuses on the basics of skinning a sim – not as gruesome as it sounds. You will be getting a brief rundown on the inner workings of your Sims, the tools you need to make new Sims, and some tips and tricks on making quality skins, without the headaches. Once you understand how the skins work, you can make them in five minutes flat. Before you know it, you're creating skins that rival Sarah Jessica Parker's five-hectare closet. Your Sims will finally recognise you as the most kind-hearted and generous god that ever graced their neighbourhood.



Enjoying the Sim-ple life.

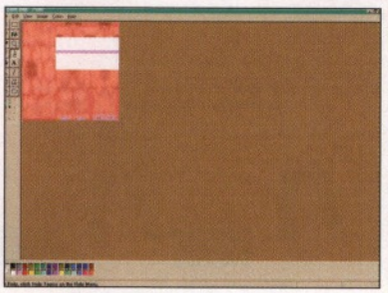
BODY LANGUAGE

Create a new Sim from head to toe.



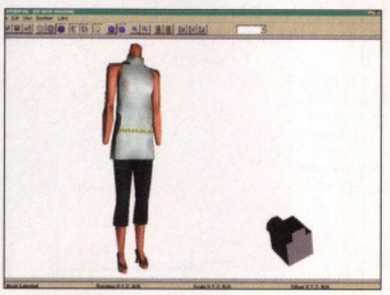
01 THEM BONES, THEM BONES...

A Sim is made up of a body, a head, hands and optional props. Getting a character into the game requires a mesh, a skin and a CMX (the file that tells the game which mesh to use and how to assemble it). Imagine a gift-wrapped box. The skin behaves like the wrapper, while the mesh is the box that determines the shape. The CMX is the glue that sticks the gift wrapper, which fits around the box.



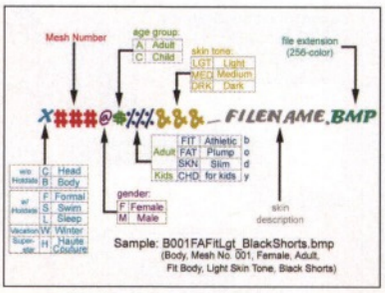
02 SKINNER'S TOOLBOX

You need a paint program for editing the head and body skin. A number of skinners use either *Adobe Photoshop* or *Paint Shop Pro*. You can use other paint programs, but it's highly recommended that the software supports layers. If you use *MS Paint*, which doesn't support layers, you'll need artistic talent oozing out of your nostrils to make a decent-looking skin.



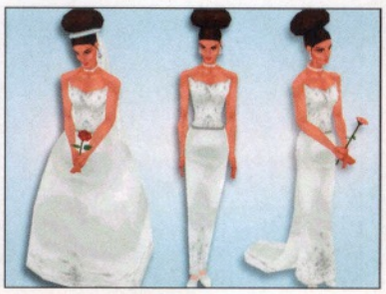
03 CHECK IT OUT

Once you've made the skin, you need to find a mesh to match the skin and then check the skin's alignment on the mesh. You can check them in the game, of course, but it would simply be too time consuming to restart the game every time you need to fix a lost little pixel. You can install *Sim Show, Body Warp* or *Simpose* from this month's coverdisc for off-game viewing.



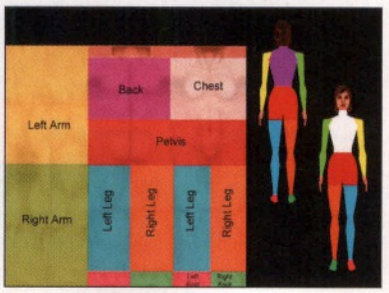
04 WHAT'S IN A NAME?

Inside your **Skins** folder (**Program Files ➠ Maxis ➠ The Sims ➠ GameData ➠ Skins Folder**) you can see such a huge number of files that it will make your eyes water. The skin, mesh and CMX filenames are labelled in such a way that it makes sense to filter the numerous files in your folder into neat categories. Imagine, one name gives details such as age group, gender, skin tone, even what it is wearing...



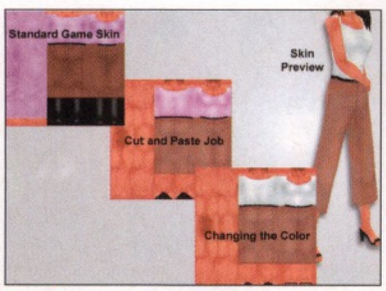
05 REMESHING

Changing a skin's mesh is a really easy way to give the illusion of having a lot of skins. You can change the mesh the skin is associated with simply by changing the mesh number on the skin's filename. Or you can use *Sim Show* (install it from the coverdisc) to view skins with different meshes. Once you've found a mesh that the skin looks fabulous in, all you need to do is click the **Import to Game** button, and you're all set.



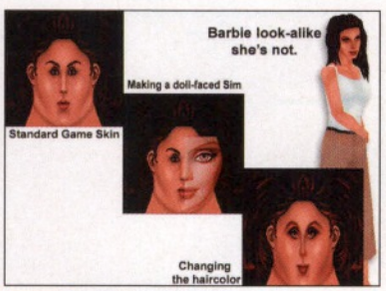
06 SKIN MAP

While unwrapping and flattening out a globe would present you with an understandable 2D view of the world, unwrapping a map of a Sim's skin makes you wonder whether the thigh bone really is connected to the knee bone. Some meshes come with colour-coded maps to help skinners identify which areas on the texture meet on a mesh. However, rather like map reading, this can take a quite bit of practice to master.



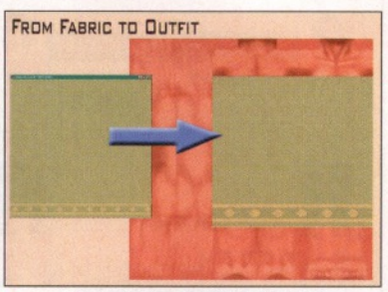
07 CUT AND PASTE

The cut and paste method is an easy way to skin a Sim without having to start from scratch. You can cut portions of the standard game skins, paste them on to a nude template, rearrange them and then save the skin in 256-colour bitmaps (indexed colour). If you don't like the result of the chop job, you can change the colour. There – you have a new skin with the minimum of effort.



08 HAIR RAISING

This method is useful for giving sims a makeover without losing blood over creating hair. You can cut facial features from standard game characters or pictures and paste them on a different face. After pasting, match the skin tone, flatten the layers and smudge away. Professional makeup artists will agree, blending is the key to fabulous-looking make-up – same with head skinning.



09 SKINNING FROM SCRATCH

If you decide to take the plunge and create your very own original skin, first outline the area on a nude skin where you want your outfit to be located. Make a new layer and either fill that area with the colour of your choice or cut that portion from a fabric swatch to paste on to your nude skin. If you have separates, create separate layers for the tops and trousers or skirts.

MESHSITES

Before making a skin, you need to find a mesh. In case you're tired of the meshes that came with the game, here's a list of sites with user-created meshes:

Master Mesh List
www.livin-it-up.net
Mesh list arranged according to age group, gender and body type.

Sim Skins
www.simskins.net
Caution: may cause extensive mesh downloading.

BNJ x LVR
http://vardari.to/sims/
For those hard-to-find, attractive male heads.

Corry's Factory
www4.big.or.jp/~sss-net/corry/
Intricate anime meshes and gorgeous hands.

Jeannie's Bottle of Sims
www.jeanniesbottleofsims.com
Fashionista haven for heads, bodies and props.

Miss Angelaaa's Sim Diva
www.angelpimpstress.com
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The Blarney Stone
www.theblarneystone.org
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Paradox
http://nightowlsuniverse.com/paradox/
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Simfreaks
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WDS
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Variety of stunning head and body meshes.

POSE AND SHOOT

Screen capture tips for budding skinners and skins site webmasters.

After loading your skin in *Simpose*, you can contort the body until you find a suitable pose for your smashing, new outfit. If you make a full-sized screen capture with the program, you may find the picture a bit too grainy, but when you reduce the size, the details are too small to impress your website's visitors with your new talent. For larger pictures without the grainy feel, you can use the printscreen button on your keyboard. Press [Alt]+[PrintScreen]. Then open a new canvas in your paint program. The canvas should be the size of your monitor's resolution (800 x 600 or 1,024 x 768). Press [Ctrl]+[V] to paste the *Simpose* window. Crop out the areas on the image you don't want people to see and reduce the size of your picture by 5-10 per cent. You will find the picture smoother, with enough details to impress your audience.

PROTIP

Realism lurks in the shadows of Sim suits.

Drop shadows are a skinner's best friend. They reduce that painted-on look of the clothing and help delineate areas on the clothing with the same fabric or colour. You can place drop shadows for collars, jewellery and sleeves. When the collar is the same shade as the rest of the clothing, drop shadows make a soft, dark line around the area of your collar. In order to trick the viewers' eyes into thinking that the collar is higher than the rest of the clothing, you can make the collar a few shades lighter than the current colour.

ALL DRESSED UP

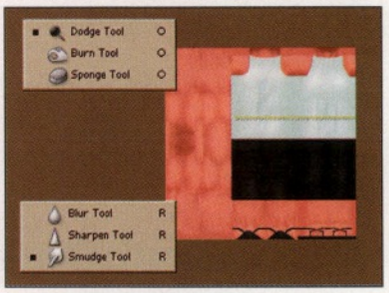
You wouldn't want to leave your Sim wandering around in the nude, now, would you?

10 OPACITY

Reduce the opacity of the clothing layers so you can view any problem areas that you might need to remove. You can save the skin with the clothing opacity reduced to around 80-90 per cent. Saving the skin with reduced opacity gives the outfit shading, without the hassles. Translucent clothing also helps to locate portions of the outfit that need shading if you plan to shade the skin manually.

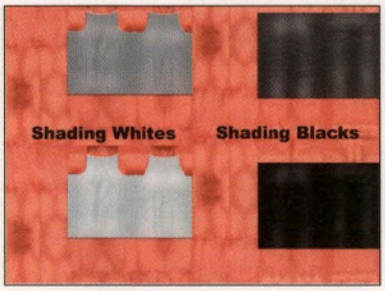
11 SHADING

Proper shading determines how good a skin appears in the game. If you are a lazy bum with no artistic aptitude, chances are you'll have difficulty figuring out how to shade clothing. Read online tutorials for drawing Manga or Anime – they demonstrate shading folds in a manner that beginners can understand. We like **www.howtodrawmanga.com/index.html** and **www.bakaneko.com**.



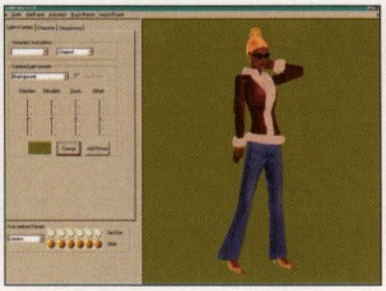
12 LIGHT AND DARK

There is a number of different ways to shade clothing. You can put folds on the skin using the burn tool, and lighten the portions surrounding the darkened folds with the dodge tool. Lighten the sections of the body that are higher, such as the chest, shoulders and rear end. Then darken the areas of the clothing that are recessed, such as the back of the knees.



13 DODGE AND BURN

Always remember to use 5 to 20 per cent exposure for the dodge and burn tools. Dodge and burn does not work with black and white. Start by making folds in grey and change the lightness to white or black. After placing the folds, smudge with a strength of 10 to 20 per cent and save in 256-colour bitmap (indexed). Of course, if you're feeling particularly masochistic, you can always draw the folds pixel by pixel.

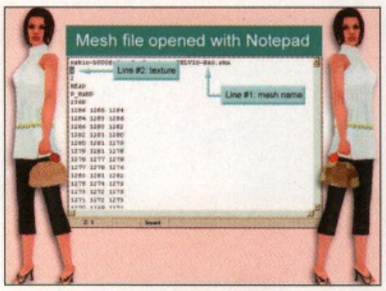


14 POSING

If you're opening a skins website, you may want to make your Sims pose in physics-defying poses for screenshots. The best program for previewing the skins and making screenshots is *Simpose* (install it from this month's coverdisc). You can view skins in close-up and varying poses that you can download from numerous websites. You can also add accessories in the program to find out how they look with the outfit.

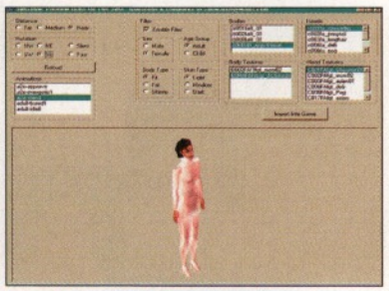
15 ADDING ACCESSORIES

If you want to add accessories to meshes, you can use *Cmx Maker*, which is also on this month's coverdisc. Load the body or head mesh, add the accessories you want and the program makes the appropriate CMX file for you. If you attach accessories to head meshes, they are permanently attached to the sim. For accessories attached to body meshes, the accessories disappear as soon as your sim changes outfits.



16 ACCESSORY TEXTURES

Unlike head and body meshes, an accessory can only have one texture. If you want to change the texture of the accessory, open the accessory's mesh with Notepad. Change the second line to the filename of your new texture without the .bmp extension. Don't touch anything else, and save. Load the new texture to your skins folder, along with the accessory and body/head meshes – and have fun.

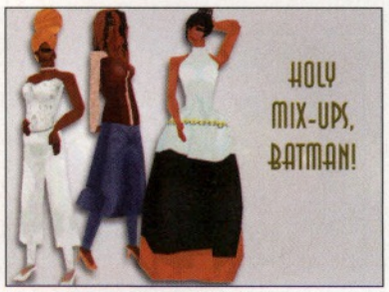


17 COMMON PROBLEMS

If your skins don't work in *Sim Show*, they won't work in your game.

If the skins look like a pinkish-white blob, the skin wasn't saved in 256-colour. Load the skin to your paint program and save it to 256-colour bitmap.

If *Sim Show* crashes every time you load the skin, you might have forgotten to include the meshes, or something may be wrong with the CMX file.



18 MORE HICCUPS

If the skin does not seem to fit the mesh properly in the game, it might be a multiple mesh problem. All the skins that have mesh number 001 in their filenames are matched with all the meshes with mesh number 001.

If you can't find a decent picture of Holly Valance for your first sims head project, that's going to be your problem – no one else can help you.

DON'T MISS PART 2 OF 3 NEXT MONTH

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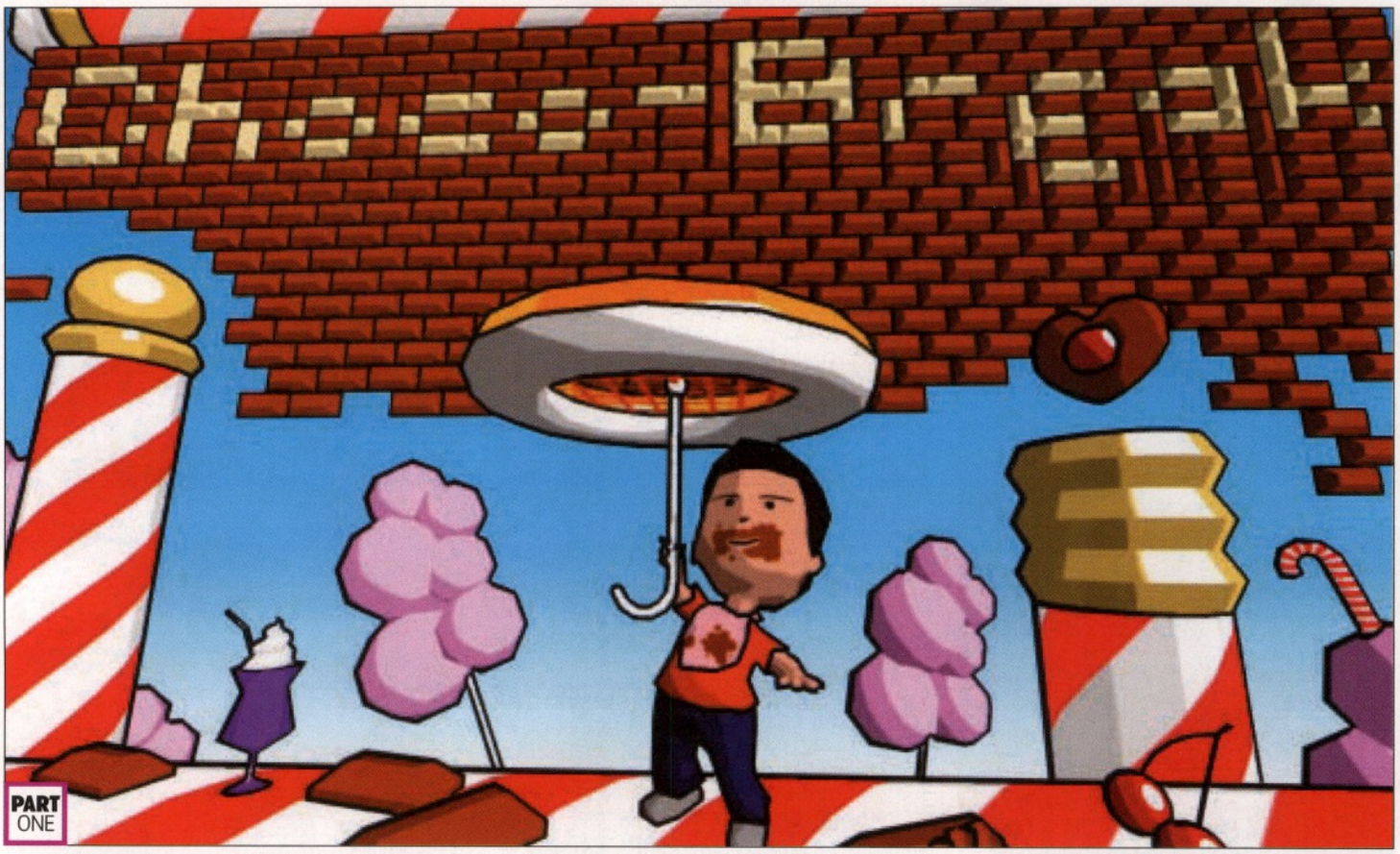


Always wanted to make a game but didn't want to learn C++? Make a bat and ball game in under an hour, with a little help from The Games Factory.

↘ CHOCOBREAK

THE GAMES FACTORY PRO

The guys who created *Chocobreak* walk you through the process of building it yourself.

ON THE DISC

The guys from Clickteam.com dropped by the office to impart their wisdom to *PCFormat* readers, and show you how to build a breakout game with 3D graphics. The full version of *The Games Factory Pro* is on this month's disc (you'll need to register the software online). There's also a completed game on the disc, Chocobreak TheGame.gam. *The Games Factory* is an object-oriented creation tool.

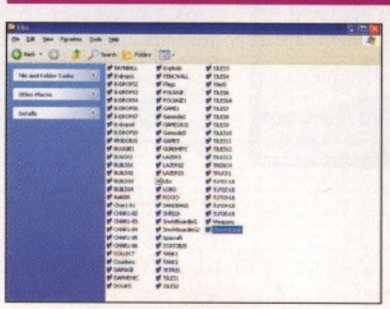
For our game, we'll drop a Ball object, with a Ball movement property; a Bat object, controlled with the mouse; and some Brick objects. Each object can be controlled via the event editor. It works with conditions and actions, that's to say, on a 'if this happens, do that' basis. You program it as you think best. The display is intuitive: conditions are listed on the left, and actions are marked by a checkmark in front of the condition. **PCF**

LEARN MORE

Let's be honest. You won't learn all you need to know about *The Games Factory* in one article. So if you need to learn how to add extra lives, a scoreboard or a main menu, you can download an extended article at **www.clickteam.com/pcf160.zip**. You can also get help and support at the Clickteam forums, located at **www.clickteam.com**.

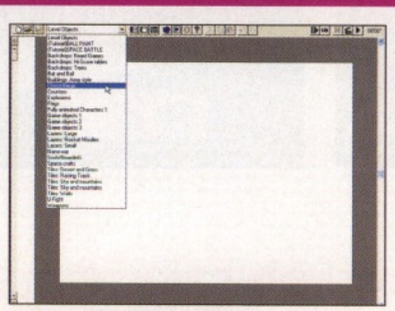
CHOCOHOLICS ANONYMOUS

Load up the *Chocobreak* disc and let the fun begin...



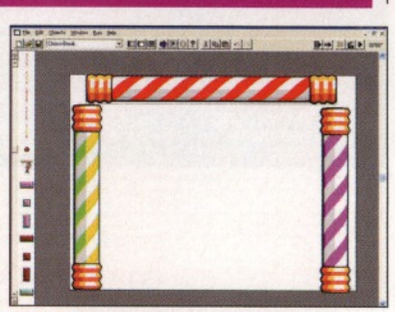
01 INSTALL THE LIBRARY

First, copy the *Chocobreak* library (the file that contains all the graphics) into the Libs folder of your *Games Factory* directory. Run *Games Factory* and the first screen is the Storyboard editor, which represents the various game levels.



02 OPEN THE LIBRARY

Click on the 1 located at the left of the empty thumbnail. This will open the Level editor, which presents you with the playfield of your game. For the moment it is empty. Click on the box named Level Objects and locate the Chocobreak item.



03 DROP THE FIRST OBJECTS

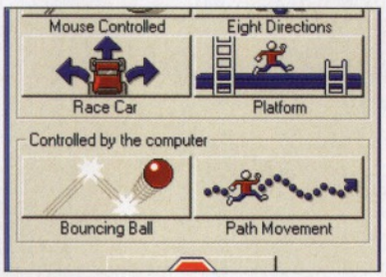
Open the library and locate the BSugarVMC3 (animated) object and drop it on the left of the screen. Then drop the BSugarVMC2 (animated) object on the right and BSugarHMC1 (animated) on the top. This will limit where the ball can go.

BAT AND BALL

It's just not cricket, y'know.

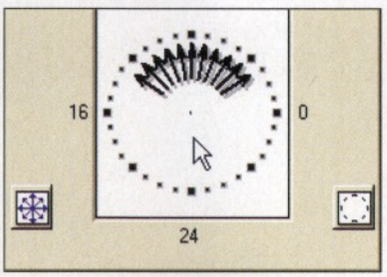
04 DROP THE BALL AND BAT

A breakout game needs a ball and a bat. Find the BallGolden object and drop it in the middle of the screen. Then locate GreedyPlayer and drop it at the bottom of the screen. This will be our bat.



05 MAKE THE BALL MOVE

Now we have to instruct the ball to move, by defining its movement property. With the right mouse button, click on the BallGolden object. From the pop-up choose Movement ➠ Select movement.



06 FINE-TUNE THE OPTIONS

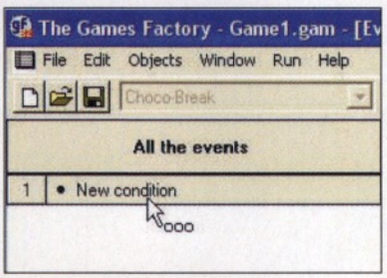
A dialog box opens. Click the Bouncing ball button. This opens the Ball movement setup dialog. Here you can set speed, angles and initial direction. Click Try movement to preview the effects.

07 MAKE THE BAT MOVE

Right-click on the GreedyPlayer object, pick Movement ➠ Select Movement and click the Mouse controlled button. With your mouse, reduce the flashing square to a line. Test effects then click OK.

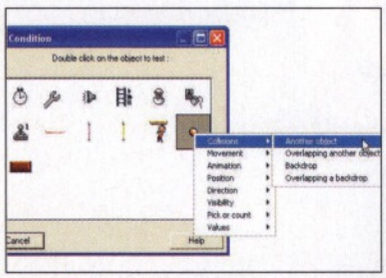
08 DROP THE BRICKS

Locate the object MilkHorizontal – this will be our brick. Drop it in the top of the playfield. Add more objects, select them all and make a block. Copy and paste to construct your bar of bricks.



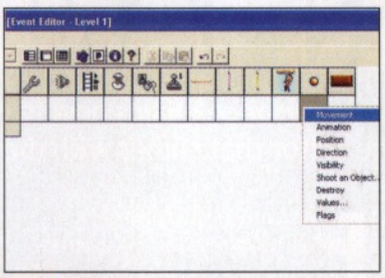
09 TEST YOUR GAME

Press the Run Game (or Frame) button in the toolbar to launch your game. All the objects are animated but the ball doesn't collide with the bricks or bat. Click the Event editor in the toolbar.



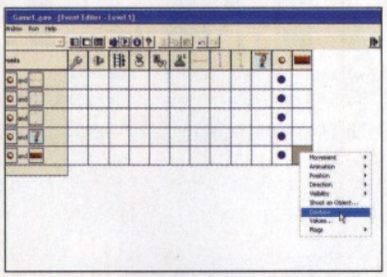
10 THE EVENT EDITOR

Let's enter an event to make the ball bounce. Click with the left mouse button on the New condition line. A dialog box opens. Now click with the right mouse button on the BallGolden object.



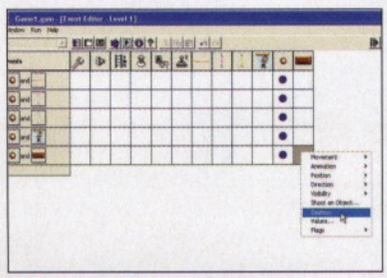
11 SET THE COLLISION

Select Collision with another object. Double-click on the BSugar HMC1 (animated) object. This adds a new line in the Event editor. Click in the empty square under the BallGolden object.



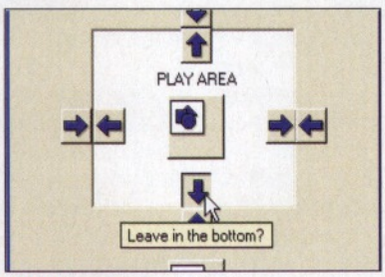
12 MAKE THE BALL BOUNCE

In the pop-up choose Bounce. You have now defined an event. Use the same method to make the ball bounce against the other BSugar objects. Enter the same event for the ball and the player object.



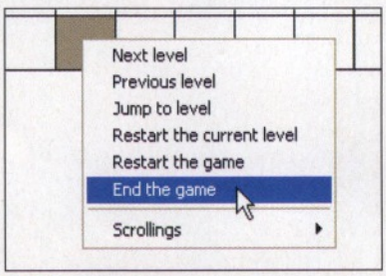
13 DESTROY THE BRICKS

Click New condition, right-click on the ball and select Collision with another object. Next pick the brick object. In front of the condition, make the ball bounce. Click under the brick and choose Destroy.



14 LOSING THE GAME

You lose when the ball exits the playfield. Click New condition, right-click the ball and choose Position ➠ Test position of BallGolden. In the next dialog select the bottom arrow then click OK.



15 END THE GAME

Define the action when the ball leaves the playfield in the bottom. Right-click the empty square in front of the condition just entered, below the Storyboard object. Choose End the game.

COMPLETING THE GAME

There are many things still to do if we want the game to look like the final version (included on the CD). You will need to insert a score object to display the score and a lives object to display the number of lives. You'll also want to create a main title screen, and maybe add some music. You will find all the necessary objects in the *Chocobreak* library.

NEXT MONTH

We will be making a horizontal-scrolling shoot-'em-up game, in the style of arcade classics such as *Defender* (older game players will remember this type of game). The goal is to destroy as many enemy vessels before you are destroyed yourself.

↘MISSION BUILDING

SECRET WEAPONS OVER NORMANDY

PART ONE

PCFormat's **very own secret weapon,** **Neil Rennison,** **explains how to create your own playable mission, using SLED, the editor that comes with the game.**

ON THE DISC

Your mission is simple: create a *SWON* playable mission using SLED, and blow those J-87 Stukas out of the sky before they destroy your convoy.

Flight sim *Secret Weapons Over Normandy* pits the player as an ace combat pilot during the Second World War. Following on from the popular but ageing *Secret Weapons Of The Luftwaffe*, *SWON* tries to capture the spirit and excitement of dog fighting in a cross between arcade and simulation action. Its arcade roots are very apparent: the game was released on console as well as PC. As a lucky PC owner, however, *SWON* comes with its very own mission editor, SLED (*SWON* Level Editor). SLED enables you to build your own missions and worlds, using a fancy 3D interface and a user-friendly logic building system. It is very rare for developers to release any of their internal game building programs, and even rarer to slap on a front-end interface and make it so user-friendly. If you own a copy of *SWON* on your PC, and have never thought of games development before, why not try your hand at this tutorial? You might discover your next calling in life. We also envisage that in the coming months there will be a very active *SWON* mission building community that you will be able to access through the various *SWON* forums.

This first tutorial is a basic introduction to SLED and explores some simple mission-building steps. There will be more complex tutorials in coming issues, but for now it's useful to get used to placing and manipulating objects in the 3D interface, and setting up simple logic events for these objects. We'll move on to linking these elements together, enabling you to produce a playable mission.

The mission objective is simple and typical of the basic missions found within the game: a couple of trucks containing secret documents have been hiding in remote farm buildings near Dover. The convoy is due to deliver these documents to agents in the town and it is the player's duty to patrol the skies while the vehicles make their way, by road, to their destination. Unfortunately, the Germans have got wind of this transfer and have sent four J-87 Stukas to intercept and strafe the convoy until it is destroyed. The player must protect the convoy by destroying the Stukas.

CREATE YOUR OWN PLAYABLE MISSION

A step-by-step guide to creating a basic mission to run in *SWON*.

01 PREPARING THE FILE

Run SLED. Load up SLEDTUT01.sld, which you can find on this month's coverdisc. This is the basic starting file and will be used for the purpose of this tutorial. For *Secret Weapons Over Normandy* to recognise custom missions, files must be saved in the Custom folder, found in the GameData directory on your install. Re-save the file using any name you like into this directory.

02 TESTING THE LEVEL

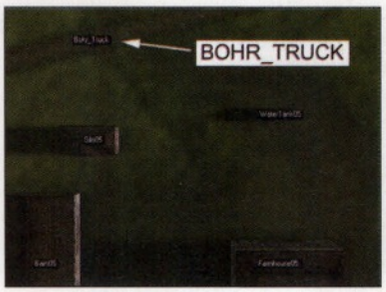
Exit from SLED and run your version of *Secret Weapons Over Normandy*. You should notice that the Custom Missions option is now selectable. Once in the next menu, you should see a mission called Danger at Dover!, which is the file that you just saved in the Custom directory. You can fly around this level to get a feel for the landscape and the buildings.

03 CAMERA MANIPULATION

Go back to the file in SLED. In the Mission Objects panel, double-click on the PLAYER plane. Notice that in the placement window, the camera centres on the plane which has been named PLAYER. Go to the Camera menu and select Free. Use this opportunity to get used to zooming, panning and rotating the camera view around the object (see the boxout on the right for more).

04 WORLD OVERVIEW

With the PLAYER plane still selected, zoom right out so that the rest of the game world becomes visible. For our custom mission, we are going to start things off by adding a convoy of vehicles travelling from the farm (above-left of airfield), towards the town (above-right of airfield). In the Mission Objects panel, you can double-click on the buildings in these two areas to zoom in and check them out.

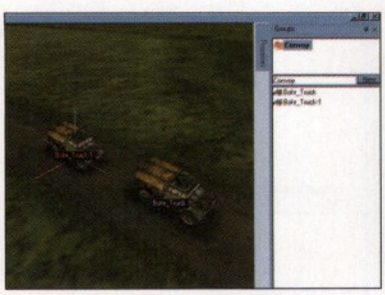


05 TRUCK PLACEMENT

Now double-click on the object called Farmhouse05 to zoom straight to the farm buildings. In the Object Types panel, open up the Vehicles category and then further open up the Nationality category as UK. Select the Bohr Truck vehicle and, holding down the left mouse button, drag and drop the truck on to the landscape. You need to place it on the road just above the farm building that's called Silo05.

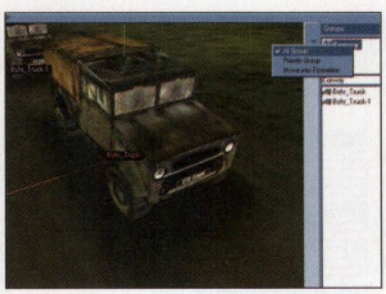
06 TRUCK DUPLICATION

If you now zoom in on the truck that you just placed, you should notice that it's facing the wrong way on the road – which isn't much use to us. You need to orientate it correctly using the keyboard. Now, with the truck still selected, hold down [Alt] and drag the vehicle, because this creates a duplicate truck. This second vehicle needs to be placed and orientated on the road in the same way, just behind the first truck.



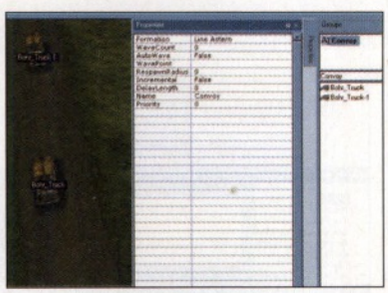
07 GROUPING THE TRUCKS

In order to easily manage these trucks at a later stage, we need to group them together. In the Groups panel on the right of the interface is a white field name box with a New button next to it. In this field, type in the name `Convoy` and then click New. Now, with the new group selected, drag and drop each truck from the Mission Objects panel into your Groups panel.



08 ARTIFICIAL INTELLIGENCE

We want these trucks to be able to travel independently across the level without needing any intervention from us, so in order to do this, we need to give them a level of artificial intelligence (AI). Right-click on the Convoy group name in the Groups panel and then select AI Group. The group icon changes to let you know that this group will be controlled using AI.



09 TRUCK FORMATION

Select the new Convoy AI group and take a look in the Properties panel. Leave all the other options except for Formation, which you need to change to Line Astern. Right-click on the AI group and select Move into Formation. You should notice that all the trucks line up in a diagonal line. Don't worry if one or two of the trucks behind the first one are off the road.

SLED 3D
PLACEMENT EDITOR

Nifty tips to help make your way around the 3D view.

The SLED placement editor works pretty much like traditional 3D modelling packages such as *3D Studio Max*. If you don't have 3D experience, don't panic, because it's quite straightforward to get to grips with this. First off, a prime requisite for SLED is a mouse wheel – you'll find it quite cumbersome without one. You could cope with a three-button mouse, but sooner or later you won't need to use the wheel to zoom in on higher detail areas for position accuracy. Below are some useful interface controls.

CAMERA NAVIGATION

Mouse wheel Zoom in or out
Mouse wheel (held down) Drag to pan/scroll around the landscape
Mouse wheel (held down)+[Ctrl] Rotate in 3D around the object (works in Free Camera only)
Double left mouse click (in Mission Objects panel) Focus and zoom to object

OBJECT SELECTION

Left mouse button (on object name) Selects objects
Left mouse button (on terrain) Able to drag a selection box
Left mouse button+[Shift] Multiple selections
Right mouse button Selects multiple objects individually

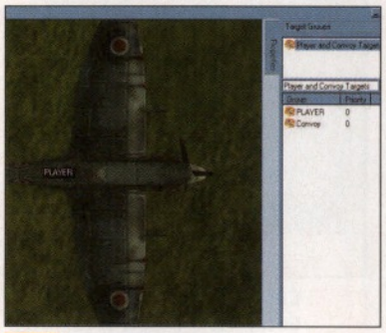
THE LOGIC EDITOR

The basic blocks that are needed in order to set up the mission logic.

The logic editor, to non-programming types, may at first seem quite daunting. While complex logic systems may indeed tax the old grey cells, the editor at the very least makes the whole task easily accessible. The editor works by accessing a number of pages that can be assigned for particular objects, groups or activities. Each page starts off with a blank white page containing a yellow box called the root node. All other logic blocks must in some way connect with this node. Blocking conditional blocks are added so that, at a basic level, evaluations can be made as to whether certain conditions have been satisfied in order for logic to be actioned. Action sets are these actions that happen depending on the condition defined in the blocking conditional. A good example of this in the tutorial is a simple 'mission to start' blocking conditional, and an action telling the enemy planes to attack the convoy. The logic works so that if the mission has started, the enemy planes must attack the convoy.

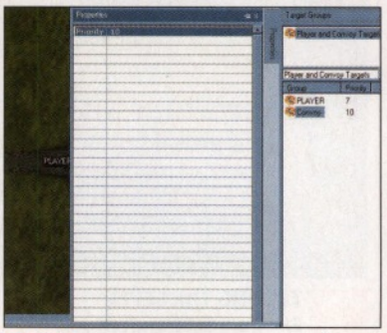
TARGET PRACTICE

Make sure those enemy planes know what they're aiming at.



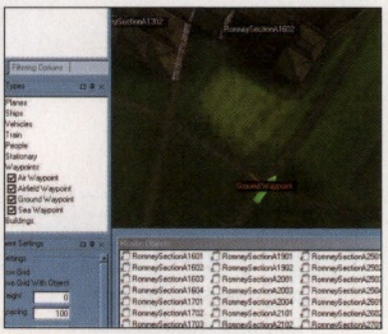
10 TARGET GROUPING

For enemy aircraft to know which objects to attack, we must create a target group. In the Groups panel, click Target Groups. As with grouping, create a new target group named Player and Convoy Targets. Drag and drop the Convoy AI group and the PLAYER plane into this group from the Mission Objects panel.



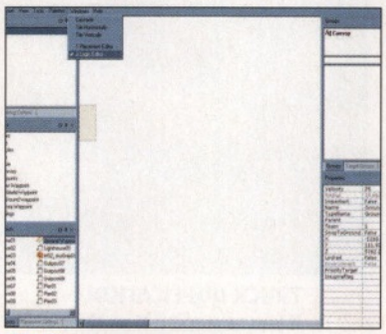
11 PRIORITY TARGETS

Each potential target needs to be prioritised so that the enemy planes know which objects need to be destroyed first. In our case, the convoy is the main target, so select Convoy in the target groups list, and in the Properties panel, modify the priority to 10. The player is less vital, so make the priority 7 for the PLAYER plane.



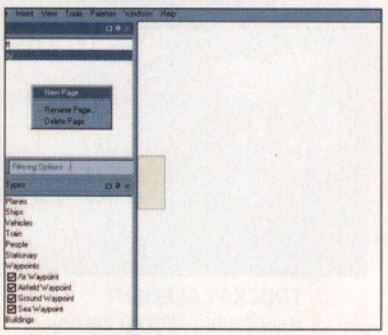
12 SETTING A WAYPOINT

We want our convoy to follow the road to the town. Double-click on the object RomneySectionA1602 to zoom in on the town. From the Object Types panel, drag and drop a Ground Waypoint on to the road just south of the building near the crossroads. Orientate this facing the town.



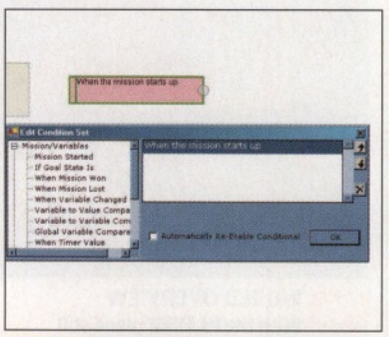
13 THE LOGIC EDITOR

The logic editor is used to breathe life into the objects in the mission. It controls the actions of the objects and sets out certain logic conditions depending on circumstances. In the Windows menu, select the Logic Editor. The placement editor view changes to a white area containing a small yellowish box on the left, which is the root node.



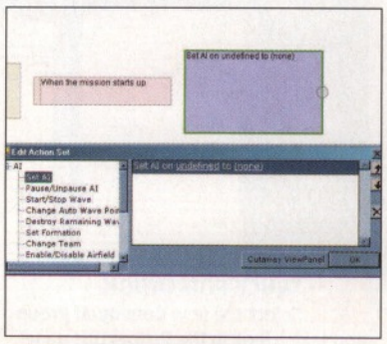
14 CREATING A PAGE

The logic editor works by accessing a number of defined pages. In the Pages panel you should already see that you are currently in the blank Aircraft page which we will be using later in the tutorial. Right-click in the panel and create a New Page. Again, right-click on the new page and rename it `Convoy`. Now select the Convoy page.



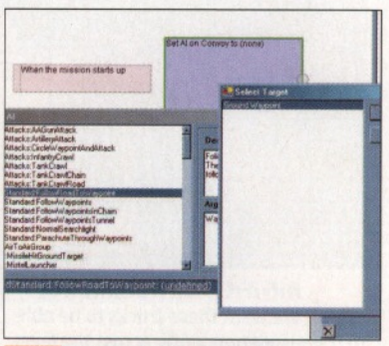
15 THE BLOCKING CONDITIONAL

Right-click in the main window and select New Blocking Conditional. A pink box appears which you can drag next to the root node. Double-click on the pink box to activate the Edit Condition Set options box. Open up the Mission/Variables list and double-click on Mission Started. This gives us our first conditional for the convoy on mission start. Click OK.



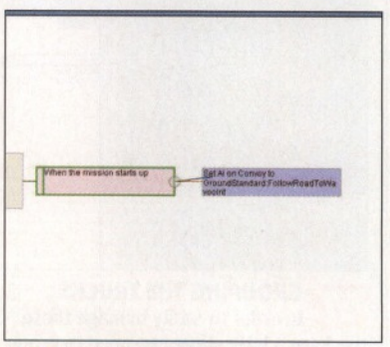
16 THE ACTION SET

Again, right-click in the editor but this time select New Action Set. A purple box appears which you can drag next to the blocking conditional. Double-click it to activate the Edit Action Set box. Open the AI list and double-click Set AI. This gives us a basic AI action in which to edit.



17 SETTING THE ACTION

Click on undefined. In Select Target choose the Convoy AI group and click OK. Click (none) and a Select AI box appears. Double-click GroundStandard: FollowRoadToWaypoint. Then click on (undefined) and select the target as Ground Waypoint. Click OK twice.



18 LINKING THE LOGIC

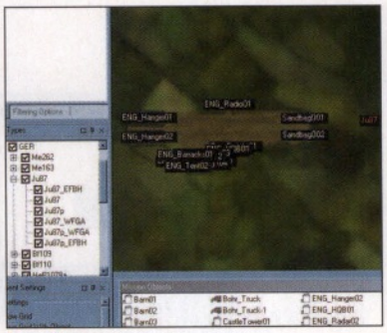
Before the logic is complete, click on the root node. It highlights green and a circle appears. Click on the circle and drag the pointer to the blocking conditional. A line appears to join the two. Select the blocking conditional and do the same so that it joins up to the action set.

PLANE SAILING

Sort your enemy aircraft from those of the good guys.

19 TESTING THE CONVOY

Now save your file and load up *SWON*. Choose the tutorial mission in the custom missions section. When you appear, you need to turn the plane around to find the convoy. Follow the convoy and the truck convoy should now drive from the farm buildings to the town waypoint via the roads.

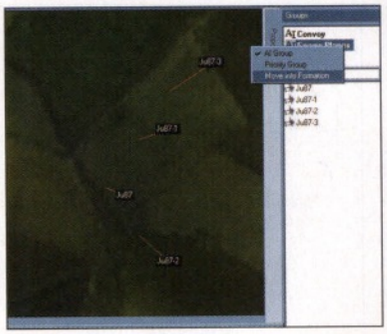


20 ENEMY SIGHTED!

Back in SLED, zoom up so you can see the airfield and the **PLAYER** plane. From the **Object Types** panel, select and drag a **Ju87 Stuka** from the **German Planes** section to the right of the airfield. Orientate it so it faces the airfield. The plane is placed under the ground, so use [+] on the number pad to move it up.

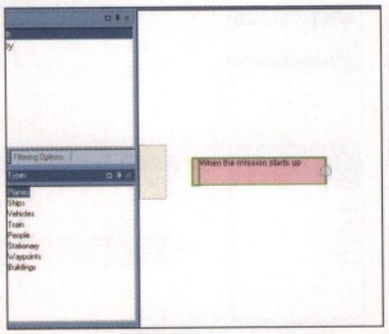
21 ENEMY DUPLICATION

Check the **Properties** panel and make sure your enemy plane is about 200 units above the ground. Use [Alt] to duplicate the plane so there are four to the right of the airfield. We need to tell these planes that they are in opposition to the player, so in **Properties**, select each plane and modify their team number to 2.



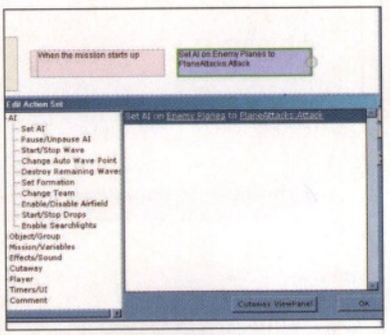
22 ENEMY GROUPS

Create a new group containing all of the enemy planes, and call it **Enemy Planes**. Right-click on the group and turn it into an **AI** group. Then go to the **Properties** panel and set the **Formation** to **V** so that the planes form a **V** formation. To see the effect this has, right-click the new group and select **Move into Formation**.



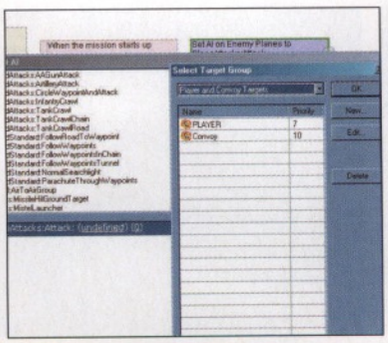
23 CREATING ENEMY LOGIC

Go to the logic editor and make sure that the **Aircraft** page is selected in the **Pages** panel. First, create a blocking conditional in the same way as before by right-clicking the blank space and selecting **New Blocking Conditional**. You should also set this blocking conditional so that it contains the same **Mission Started** variable.



24 CREATING ENEMY ACTIONS

Create a new action set and, in the **Edit Action Set** window, double-click on the **Set AI** function as with the convoy. Select **undefined** to be the **Enemy Planes** group and **(none)** to be the **PlaneAttacks: Attack AI**. Remember to double-click. This creates a command for the planes to attack ground and air objects as they choose, following targeting priorities.

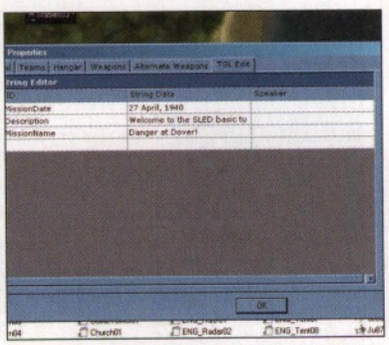


25 ATTACKING TARGET GROUP

We need to tell the enemy planes to use this AI on the convoy, as well as when needed on the player. The **Select AI** window should still be open. In the lower box, click **undefined** so the **Select Target Group** window appears. In the list, select the target group. Now link up the nodes.

26 PLAY THE MISSION

Save the file and load *SWON*. Run the custom mission. The enemy are above you, flying towards the airfield. They ignore you if you don't fire, but they try to destroy the convoy, which is their priority. If you engage them, they decide whether to attack you or go for the convoy.



27 MODIFYING MISSION STRINGS

Go back to the SLED file. Go to **Tools→Mission Properties→TGL String Editor**. This sets all the string information for the level and it is here that we create the goal string. You see text strings that contain the information on screen at the start of a mission. These can be modified.

MANIPULATING OBJECTS

Useful keys to help place mission objects in the world.

Once an object is placed on the terrain in SLED, it is quite easy to move that object around the world. Sometimes, while dragging and dropping certain objects such as planes on to the terrain, they may appear underneath it. In these circumstances, you can use the [+] and [-] keys on the number pad to adjust the height. The **Properties** panel also gives editable co-ordinates of a selected object so you can accurately adjust the height, rotation or translation. Below are some useful ways in which to adjust the location of your objects.

Left mouse button drag	Move the object along the X and Z axis
[+] keypad	Move object up along the Y axis
[-] keypad	Move object down along the Y axis
[5] keypad	Reset object position
[4] keypad	Turn object left around the Y axis
[6] keypad	Turn object right around the Y axis
[8] keypad	Pitch object down around the X axis
[2] keypad	Pitch object up around the X axis
[7] keypad	Roll the object left around the Z axis
[9] keypad	Roll the object right around the Z axis

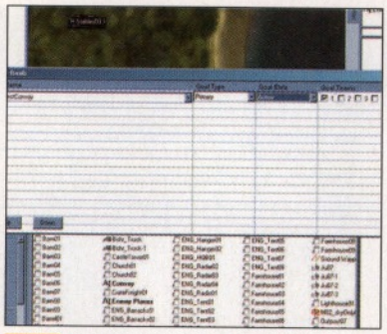
TEMPLATES & TUTORIALS

A few tips to help you further explore SLED.

As you may have noticed, the *SWON* install comes equipped with many scenario template files that can be used in the SLED editor as a basis to build up missions. The easiest way to access them is to select **New** in the **File** menu. You'll notice that the file type is a .tld file, which is different to the mission files, which are .sld files. Once you have a template open, it is a good idea to immediately save it as a .sld in the **Custom** folder so that it can be selectable in *SWON*. The basic templates should enable you simply to fly around the chosen terrain. SLED also comes equipped with its very own set of tutorials found in the **Help** menu. One thing to note, however, is that if attempting the basic tutorial, it refers to a file called **1stMission.tld** in the templates folder. However, this file is not actually there, due to an install problem. Simply copy the file from your *SWON* install CD (it's on disc 1 in **GameData\GameData\Custom\Templates**) into the templates folder to get it working.

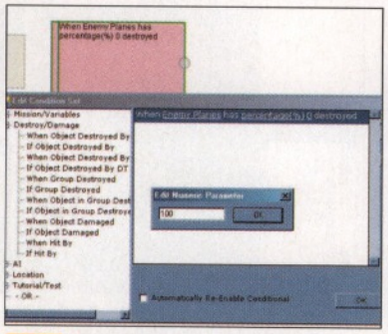
MISSION ACCOMPLISHED

Putting the final touches to your very first custom mission.



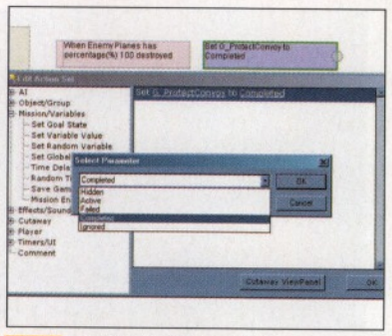
28 PRIMARY GOAL CREATION

Create an ID called **G_Protect Convoy**. The G denotes that it is a goal. In the description, type `Protect the truck convey from the Stukas.` Click **OK**. Go to **Tools→Goals**. On the first available line, click twice and choose **G_ProtectConvoy**. Set the **Goal Type** as **Primary** and **Goal State** as **Active**.



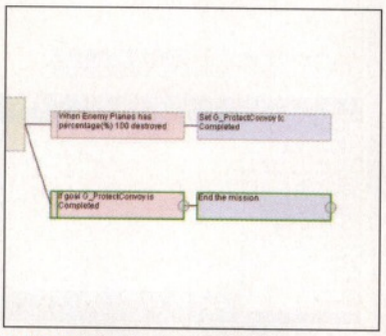
29 WINNING THE MISSION

In the logic editor, create a page called **Mission Win**. Create a blocking conditional. Open the **Destroy/Damage** section and double-click **When Group Destroyed**. For **undefined**, select the enemy plane group. Keep **percentage** as it is but change **0** to **100**. Now the group is only destroyed when all of it is destroyed.



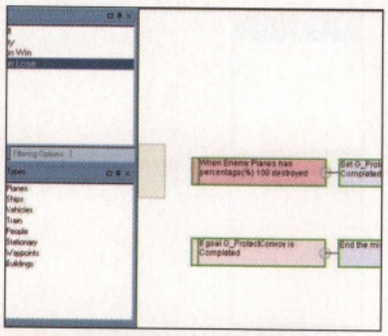
30 COMPLETED GOAL

Create an action set and, when editing, open up the **Mission/Variables** section and double-click **Set Goal State**. For **undefined**, select **G_ProtectConvoy** and for **Active**, make it **Completed**. Link the blocking conditional, action set and root node together and this gives us our first way of completing the goal.



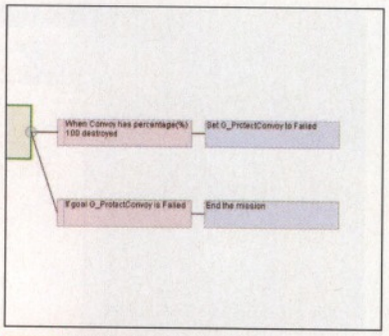
31 ENDING BY WINNING

In the same page, create a new blocking conditional. Open the **Mission/Variables** section and double-click **If Goal State Is**. For the first **undefined** select **G_ProtectConvoy** and for the second **undefined** select **Completed**. Create and edit an action set using the **Mission End** command in the **Mission/Variables** section. Link these back to the root node.



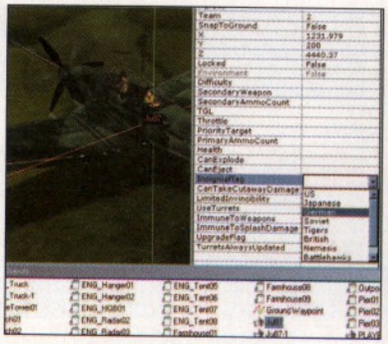
32 LOSING THE MISSION

Create a new page called **Mission Lose**. This page is essentially the same as the winning page with a few minor differences. Copy the logic from the winning page by box drag selecting, and using [Ctrl]+[C] to copy, selecting the losing page, and using [Ctrl]+[V] to paste. Make sure they are all linked up correctly to the root node.



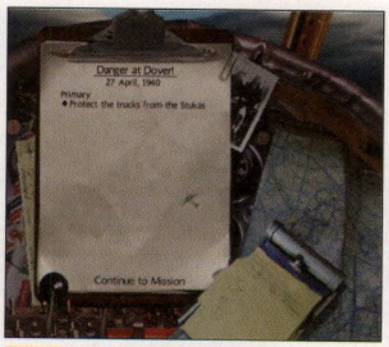
33 ENDING BY LOSING

To make the logic lose, edit the first blocking conditional so that the convoy group replaces the enemy planes group. Then, in both the following action set and the next blocking conditional, change **Completed** so that they are failed. Now, when 100 per cent of the convoy is destroyed, the player loses the mission and it ends.



34 ASSIGNING INSIGNIAS

You can give insignias to the various vehicles. In the **Mission Objects** panel, select each of the vehicle objects (not the groups), including the **PLAYER** plane. In the **Properties** panel, change **InsigniaFlag** to **German** for enemy planes, and **British** for the trucks and **PLAYER**.



35 THE PRIMARY GOAL

Save the SLED file. The basic mission should now be finished. Run *Secret Weapons Over Normandy* and select the **Danger at Dover!** mission. The logic you created now enables this mission to have the two possible outcomes of winning and losing.

36 FLY THE MISSION

You can now attempt the mission. To test it, fly around without attacking the enemy. Notice that they largely ignore you unless you get too close. Once they have destroyed the convoy, the mission is lost. Finally, test it to try to win the mission by destroying all the stukas.

DON'T MISS PART 2 OF 3 NEXT MONTH

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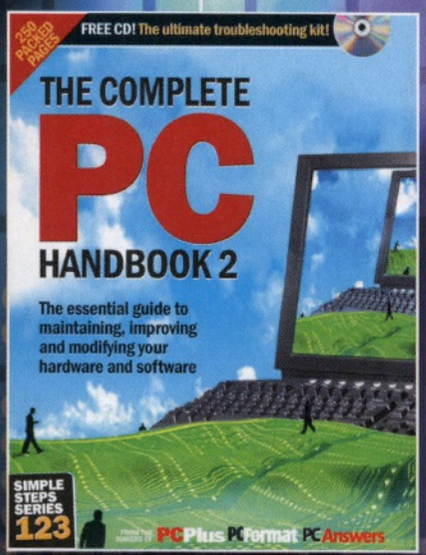
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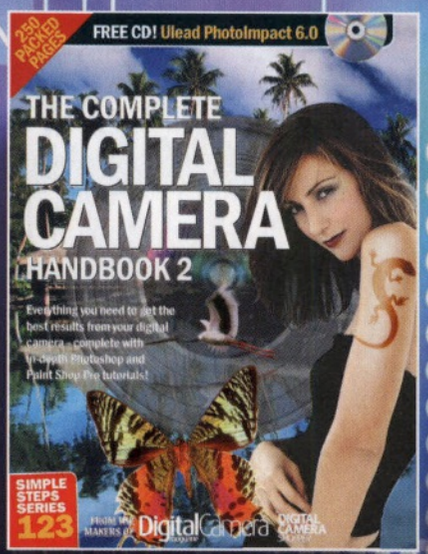
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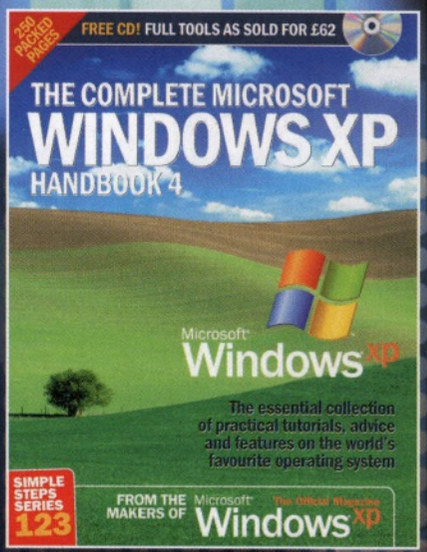
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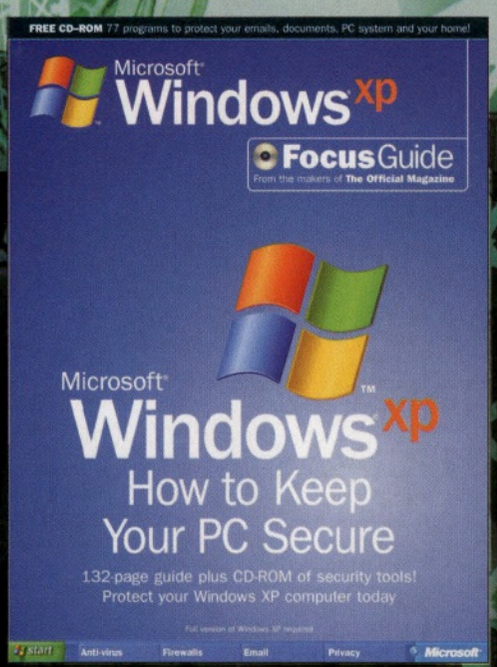

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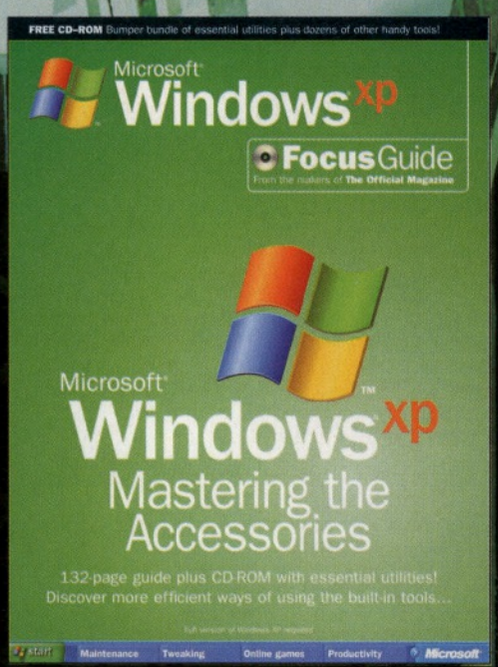

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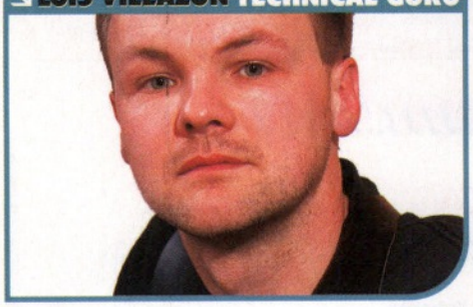
How to...

Q&A/Technical support/Practical guides It's edumacational!

NEED EXPERT ADVICE? Your questions answered! (p.168)

LUIS VILLAZON TECHNICAL GURU



THE FAT OF THE LAND

You probably weren't aware of this little-known marketing fact, but the fatter you are, the more magazines you buy. Fat people have less energy available for active hobbies, such as kite surfing and tiger wrestling, but reading magazines, particularly if you subscribe, takes almost no energy at all.

So this month *PCFormat* is making a big push to extend its readership base by making you simply too sedentary to do anything else. We're going to show you how to share your webcam over the network to save you the bother of getting off the sofa to answer the door, talk to your spouse and so on. And just in case your sofa is a bit too far from the telly, we'll help you calibrate a projector so that you can increase the size of the picture rather than burning any unnecessary calories by moving it closer.

So just sit back, relax and open another packet of those yummy marshmallows.

pcfhelpline@futurenet.co.uk

MAKING THE MOST OF YOUR PC

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3. Software know-how
Our in-depth guides are guaranteed to get the most out of all your software. Whenever we give away big full programs we always back them up with expert editorial.

3. On the disc?
One of these fellas means it is!

ON THE DISC

DO IT YOURSELF

Your PC is capable of amazing feats – but it won't do anything unless you know how to tell it to do it first.

CALIBRATE A PROJECTOR

Get a pristine picture by perfecting your projections. **p.166**

SHARE A CAM OVER A LAN

If you're feeling particularly extrovert, why not share your wacky webcam ways with everyone else on your network? It's easy.

TRACK YOUR EMAILS

Never put up with pathetic 'I didn't see your email' excuses again – now you can find out the exact moment your mail was read.

Plus

167 OPTIMISE AUDIO
Convert MP3s to WMAs to save space without losing quality.

168 ASK LUIS
Technical troubles? Let Mr Villazon ease your woes...

↘ VIDEO FORWARDING

CAMS ON YOUR LAN

ON THE DISC

SKILL LEVEL

TIME TAKEN 35 MINUTES

Not wanting to miss the action, **Joe Cassels** explains how to share a video capture card or webcam across your network or the internet.

24-CARAT TIP

>>ALTERNATIVES

WHAT IF YOU DON'T HAVE A WEBCAM?

Most digital cameras double up as webcams. They connect using the same USB lead as the one you use to transfer photos. To find out if your camera can be used this way, check the instructions for your model or browse the manufacturer's website for support. You may need to download a new driver and modify the settings on your camera, but this is much cheaper than buying a new webcam.

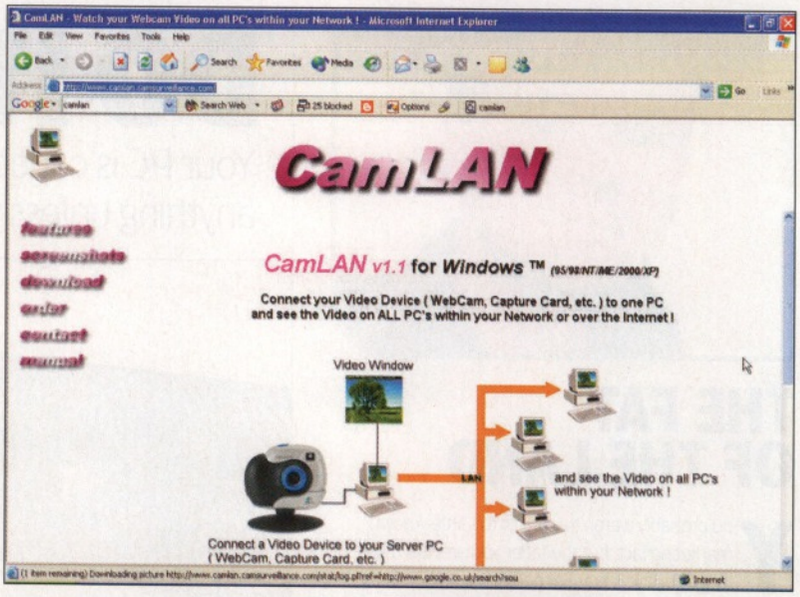
Whether you want to use a webcam for surveillance, or to watch live TV across a network, being able to forward a video source is a must. The original source could be a TV capture card, a webcam or a DVB video interface.

While you might like to pipe TV and other video signals to all the PCs on your home network, the chances are that you don't want to invest in multiple TV capture cards, install a splitter and lay huge quantities of coaxial cable everywhere. This is the physical method of providing TV to multiple desktops, which provides high quality video but at an equally high cost, not to mention the time and hassle. However, there is, as always, an easier way.

CamLAN is a video forwarding program, which can be downloaded from **www.camlan.camsurveillance.com** or installed from the coverdisc. It consists of a server program, which you install and run on the PC with the webcam or video capture card, and a client app, which you run on your other PCs to pick up the video. The shareware version is a limited trial – you can only view video in a half-sized frame. This limitation is lifted when you order and download the full version, however, which costs £8.59.

CamLAN is great for forwarding webcam video over a network, which could enable everyone to view a point of interest in the building, such as the hugely popular coffee pot camera transmission that got more hits than Cambridge University's Computer Science pages. It also has a handy domestic use: as a video baby monitor. How? Set up a PC in the baby's room alongside an audio baby monitor. Run the *CamLAN* server software on this PC and set it up to forward video from this PC's webcam. Now run the *CamLAN* client on a PC in the lounge. If you hear a sound on the audio monitor, check the video. Bear in mind that webcams freeze from time to time. To make sure you aren't watching a still picture, hang a mobile in the camera's shot, and its movement shows your image is still live. It's important to use an audio monitor as well, because *CamLAN* doesn't forward audio streams.

If you want to forward TV pictures or other video with a soundtrack, you may like to install *Unreal Live Server* on the source PC and its accompanying *Streaming Media Player* on the client PC. You can run this alongside *CamLAN* or try to forward both audio and video using the *Unreal Live Server*. For details, installation and configuration instructions, and download links, browse to **www.umediaserver.net**. **PCF**


CamLAN - Watch your Webcam Video on all PC's within your Network ! - Microsoft Internet Explorer
CamLAN
features
screenshots
download
order
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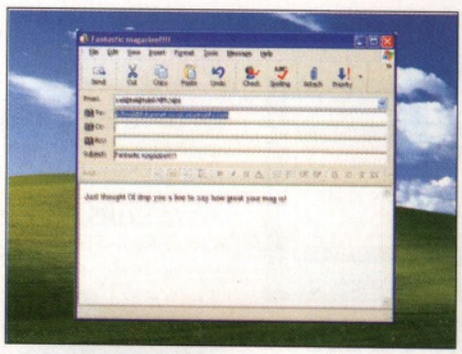
manual
CamLAN v1.1 for Windows ™ (95/98/NT/ME/2000/XP)
Connect your Video Device (WebCam, Capture Card, etc.) to one PC
and see the Video on ALL PC's within your Network or over the Internet !
Video Window
LAN
and see the Video on all PC's within your Network !
Connect a Video Device to your Server PC
(WebCam, Capture Card, etc.)

Visit the web home of *CamLAN* at www.camlan.camsurveillance.com.

>>CONNECTING A CLIENT Get another PC on your network to pick up the video signal.

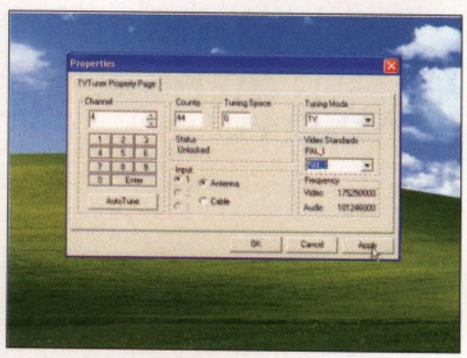


01 TRANSFER LIST

Install and run *CamLAN* on your second PC. You see nothing in the video window until you configure it. Choose **Program ➡ Settings ➡ Transfer** and enter the IP address of the PC connected to the camera.

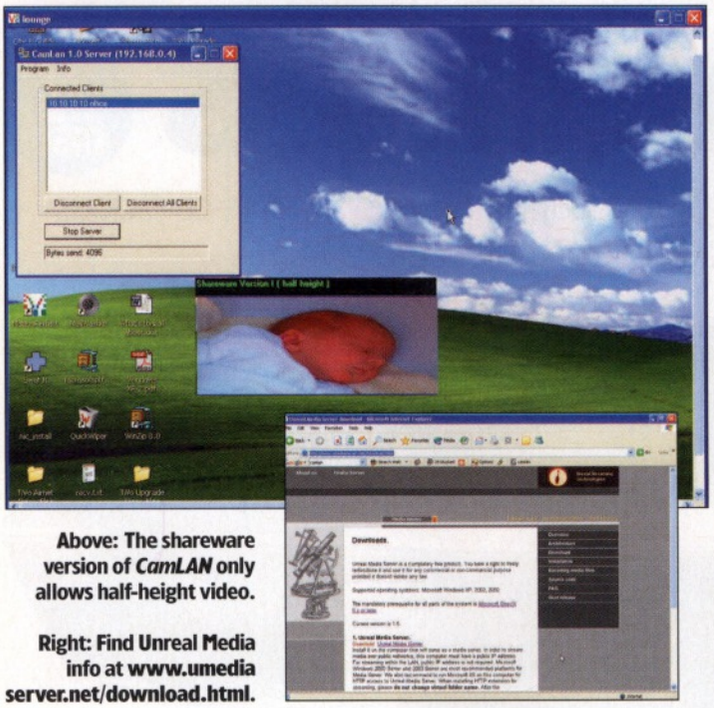
02 VIDEO STARS

Make sure that the port number is the same as the one used on the server PC. Now change to the **Video Window** tab and select the size of the video that you want. Click **OK**.



03 LOOK NOT LISTEN

Press **Connect to Server** to begin receiving video pictures from the webcam. Note: *CamLAN* only forwards pictures – you need to set up different software alongside *CamLAN* if you want to forward sound, too.



Above: The shareware version of *CamLAN* only allows half-height video.

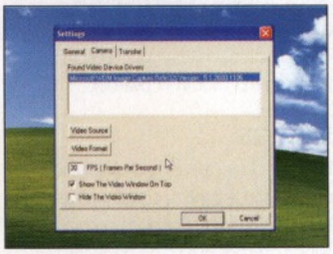
Right: Find Unreal Media info at www.umedia server.net/download.html.

>>GETTING STARTED

How to send your images to the world.

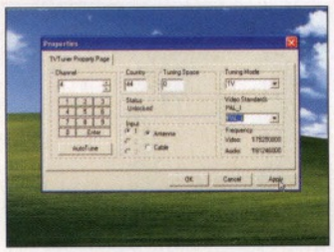
01 HALF A CHANCE

Install the shareware version of *CamLAN* from this month's coverdisc. This version of the software provides you with all the functions you need, but the image is half the size. Launch the *CamLAN* server on the PC with the camera connected to it.



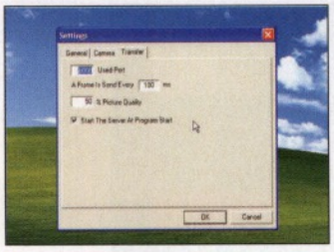
02 SIZE IT UP

Choose **Program➡Settings➡ Camera and Video Source**. Select your camera and click **OK**. Choose **Video Format** and select the stream settings that you want. These include the picture size and colour depth. Click **OK** to confirm your choices.



03 TV SHOW

If you're forwarding the input from a TV card, click **Video Source➡ TV tuner**. Now enter the channel information or use the **AutoTune** function to lock in to a TV channel. Make sure that **PAL video** is selected and that you're using the antenna. Then click **OK**.



04 REFRESH YOURSELF

Switch to the **Transfer** tab and select the port used, the frequency of refresh and the picture quality. We advise you to stick with the defaults unless you have a good reason to change them. Click **OK** to confirm your choices and finally press **Start Server** to begin video streaming.

↘SITE IMPROVEMENTS

TRACK YOUR EMAIL

Find out exactly when a message has been read and who read it.

Everyone has heard the lame excuse when waiting for an important email (and you've probably even been forced to use it yourself on occasion): "I did send it – didn't you get it?" No doubt you get the feeling that you're seriously being blagged whenever you hear this, but the internet being what it is means that you can never be 100 per cent sure whether or not your email has indeed gone astray.

You'll be glad to know that this is the last time you'll have to put up with any such uncertainty. If you take a trip along to **www.readnotify.com**, you can sign up for a free trial of the ReadNotify email notification service (the full service costs $24 per year – that's about £13). It has full tracking capabilities, so when you send an email, you're notified of exactly when it was opened by the recipient. The service also informs you how long your message was read for and whether or not it was forwarded on to anyone else. This is ideal if you're sending private correspondence and want to make sure it stays that way.

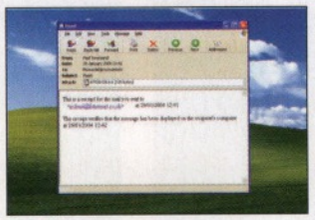
The tracking service extends further and can even inform you of the geographical location of the person who has read the email that you sent. If security is a big issue, take advantage of self-destructing emails and ensure that sensitive contents aren't left hanging around for longer than necessary. **PCF**

>>START THE TRACE

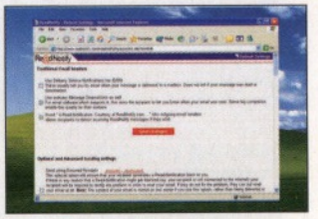
Start monitoring your emails right now.

01 Pop along to www.read notify.com and click on Sign up now! You need to complete a brief registration form with a few basic personal details before you can get started.

02 Start using the service immediately. For example, to trace an email going to pcfmail @futurenet.co.uk you need to address it to pcfmail@futurenet. co.uk.readnotify.com.



03 When your outgoing message is read, you receive a confirmation email from the ReadNotify service, informing you of the exact time and date that the email was opened. So no more excuses...



04 Configure your account settings and determine how messages are tracked. For example, if you send a URL in a message, you can choose to be informed when the recipient clicks on it.

↘TWEAK YOUR DISPLAY

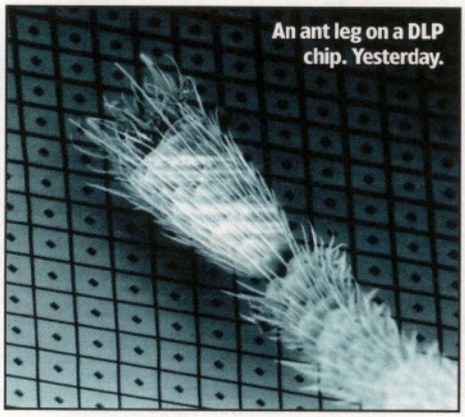
PERFECT PROJECTIONS

ON THE DISC

SKILL LEVEL

TIME TAKEN 60 MINUTES

Your picture may be big but it could look better. Image-conscious **Neil Mohr** pitches his idea of the perfect projector.



An ant leg on a DLP chip. Yesterday.

Increase the size at which you view your snaps. But widescreen ain't much use without the correct calibration.

24-CARAT TIP

Ceiling mounts

Projectors are best when mounted to your ceiling. No more worrying about people blocking the image, no more tripping over cables because they have to be fixed out of the way, and it even reduces the fan noise. But ceiling mounts can cost over 100 quid. Ouch! A cheap alternative is to buy a 14-inch TV wall mount, pop your projector on this either the normal way or upside down and hurrah!, you have an instant, cheap ceiling mount.

Have you taken the projector plunge? Welcoming that little bundle of joy into your world is possibly the biggest life-changing experience you'll have. No longer do you have to suffer squinting at a postage stamp sized display, instead you can revel in a true widescreen display that isn't measured in puny inches, but manly feet. How can life get better than this? Well, it might help if you calibrated it...

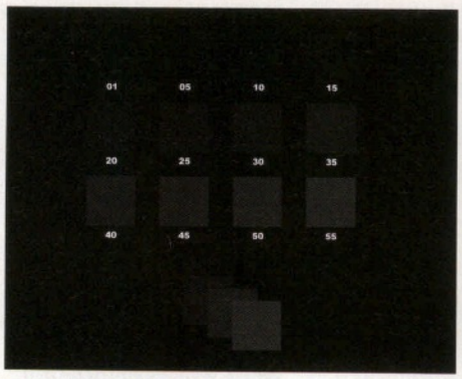
Thankfully, you read *PCFormat*, and we have a group of tests helping you to set up your projector for the perfect image by looking at areas of contrast, brightness, colour, tint, sharpness and geometry. The first two are simply test card calibration tests to make sure the projector's settings are present and correct. Colour, tint and sharpness are more subjective but there is still a distinct definition between the right and wrong settings, while the final geometry test is to make sure the image is square and the pixel timing as good as possible. To help with each test, you'll find specific images on this month's coverdisc.

Bright ideas

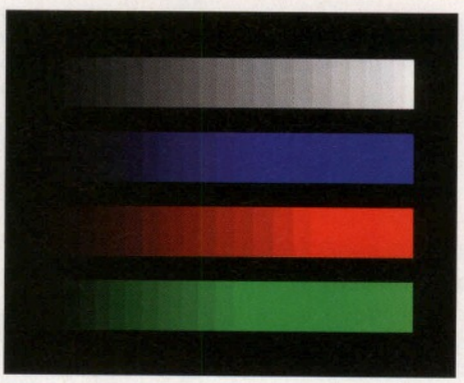
Calibration of your projector should ideally be carried out in the same lighting conditions as those in which you would choose to watch a film. The calibration should also be done for each of the different inputs – most projectors store separate settings for each. To begin, utilise the brightness and contrast test cards, and adjust each setting accordingly, so that the blocks start to disappear at both the lowest dark spot and lightest white spot.

For the DVD input, you need to freeze frame a scene that has both pure white and pure black areas. Adjust the brightness to retain detail in the dark areas, then adjust contrast to retain detail in bright areas. You will discover that colour and tint are more subjective – a scene or image with skin tones is usually best, but the supplied colour gradients will help you balance the levels so they don't burn out at the higher brightness levels. Sharpness is usually only available on video inputs and once again is subjective – it makes the pixels of the projector more or less

>>COLOUR ME BAD It's not all black and white. Unless you're a dog.



01 MONO MADNESS Adjust the brightness so you get a true black – the darkest black levels should just disappear into the black background. For the white spot, adjust the contrast until the lightest white blocks disappear into the background.

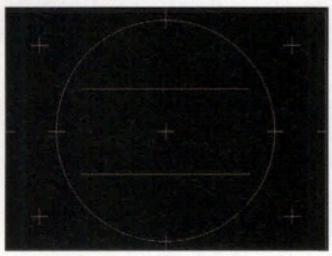


02 COLOUR FAST For colour and tint check the colour gradients – these should be smooth and each segment should look distinct at the brightest and darkest points. Adjust the colour if the high or low ends are beginning to merge.

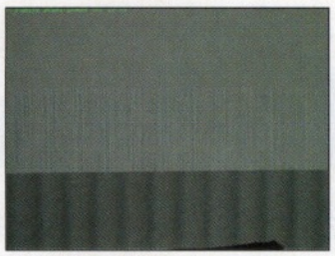
03 TINT IN Tint and sharpness are more subjective and are best checked with a still image or paused video. Adjust the tint by checking skin tones – this generally makes the best guide. For sharpness, look closely at the edge of objects – hair is a good example.

>>GOING DOTTY

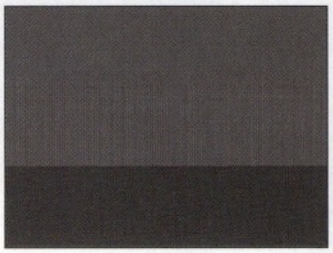
Tweak phase and timing to get a perfect display.



01 CIRCLE LINE The standard geometry test is to make sure the image is square and has the right keystone correction. It's as simple as checking the central circle is, well, circular – which can easily be checked by sight.



02 INTERFERING SO-AND-SO Interference patterns check to see how good the timing is with your projector. If the timing is off, you see patterns similar to these, above. These are not stationary – they drift and change at random.



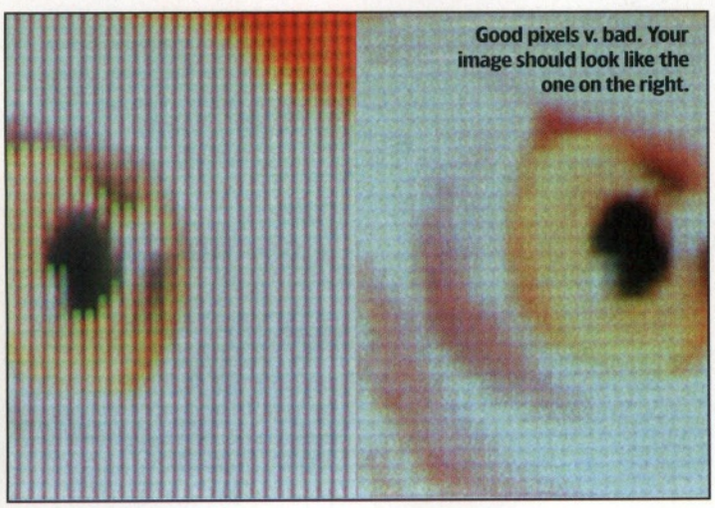
03 JUST A PHASE Try to eliminate these by adjusting the projector's pixel phase and pixel timing. It may not be possible to totally remove the effect but reducing it is better than nothing. Be aware that this has to be adjusted for each screen resolution.

04 MOIRÉ IS LESS Don't be concerned with stationary moiré patterns – these are generated by all digital displays. They disappear with a zero keystone setting, but you will need to adjust the physical location of your projector to compensate.

distinct, so the decision is down to you to choose whichever you prefer.

Geometry lessons

Finally, there's the geometry – this can be as simple as checking you have a square picture that's at the right keystone level. Using the geometry image, check that the circle is circular and that the square border runs round the edge of the screen. To check pixel timing, there's a set of halftone patterns that are designed to push decoding hardware. If the pixel timing or phase isn't correct, you will see shimmering vertical or horizontal effects. Alter the pixel phase and timing to eliminate this interference and you should have a perfectly calibrated image. **PCF**

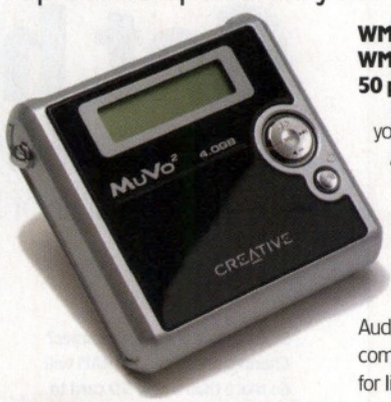


Good pixels v. bad. Your image should look like the one on the right.

↘PLUS! MP3 AUDIO CONVERTOR LE

OPTIMISE AUDIO

Make your music files smaller and free up some space on your hard drive.



WMA v MP3. WMA files can be up to 50 per cent smaller.

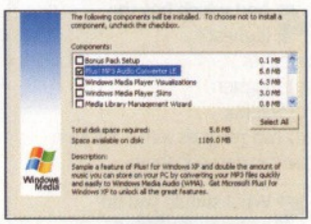
Whether you're ripping CDs or sharing files over the net, one thing's for sure – MP3 files can fill up your hard drive in no time at all. With your average song taking only a couple of minutes to download, your disk space soon gets gobbled up. A solution to this problem comes from an unlikely source: Microsoft. The Windows Media Bonus Pack for Windows XP is a collection of tools and utilities that help improve your enjoyment of all things audio and video. One of these is the *Plus! MP3 Audio Converter LE* program, which converts your MP3 files to the WMA format.

For the uninitiated, the WMA format, or Windows Media Audio, uses a different kind of compression to that of MP3. On a like for like comparison, you can expect a music track in WMA format to be around 50 per cent smaller than its MP3 counterpart. The program doesn't make any change to the content of a file, so there's no chance of playback quality being affected. The only proviso flagged up by *Plus! MP3 Audio Converter LE* is that MP3 files that are encoded at less than 96Kbps may not contain enough data to enable the converted file to be compressed correctly. **PCF**

>>THE LEGAL FILE SWAP

Start converting your tunes now.

01 Download a copy of the Windows Media Bonus Pack from www.microsoft.com/windows/windowsmedia/download/default.asp.



02 The *Plus! MP3 Audio Converter LE* utility is one of many components contained in the pack. You can choose to install them all or just this one.

03 Launch the program and choose to convert specific audio files. Click on Next and add the file you want to convert from MP3 to WMA format.

04 Then choose a bit rate for playback or have it set automatically by the program. Select the option to delete the original file and save disk space.

Ask Luis...

Your questions answered

Public inquiry

Luis' pub quiz

Posers that go perfectly with a pickled egg...

1 **Which of these technologies will be obsolete first?**
a) IDE hard disks
b) Wired Ethernet
c) PCI bus
d) CRT monitors

2 **How many transistors are made every year?**
a) 1 trillion
b) 10 trillion
c) 100 quadrillion
d) 1 quintillion

3 **Which metal element has the lowest electrical resistance?**
a) Copper
b) Bismuth
c) Aluminium
d) Gold

4 **And which has the highest?**
a) Silver
b) Tungsten
c) Sulphur
d) Two iron nails with a 300mm air gap between them

5 **What should you do with an unsolicited email attachment?**
a) Open it to see if it is a virus.
b) Reformat your hard disk.
c) Round up Cocky Locky, Ducky Lucky, Goosey Lucy and Turkey Lurkey and go and tell the king.
d) Get on with the rest of your life.

Answers on page 173

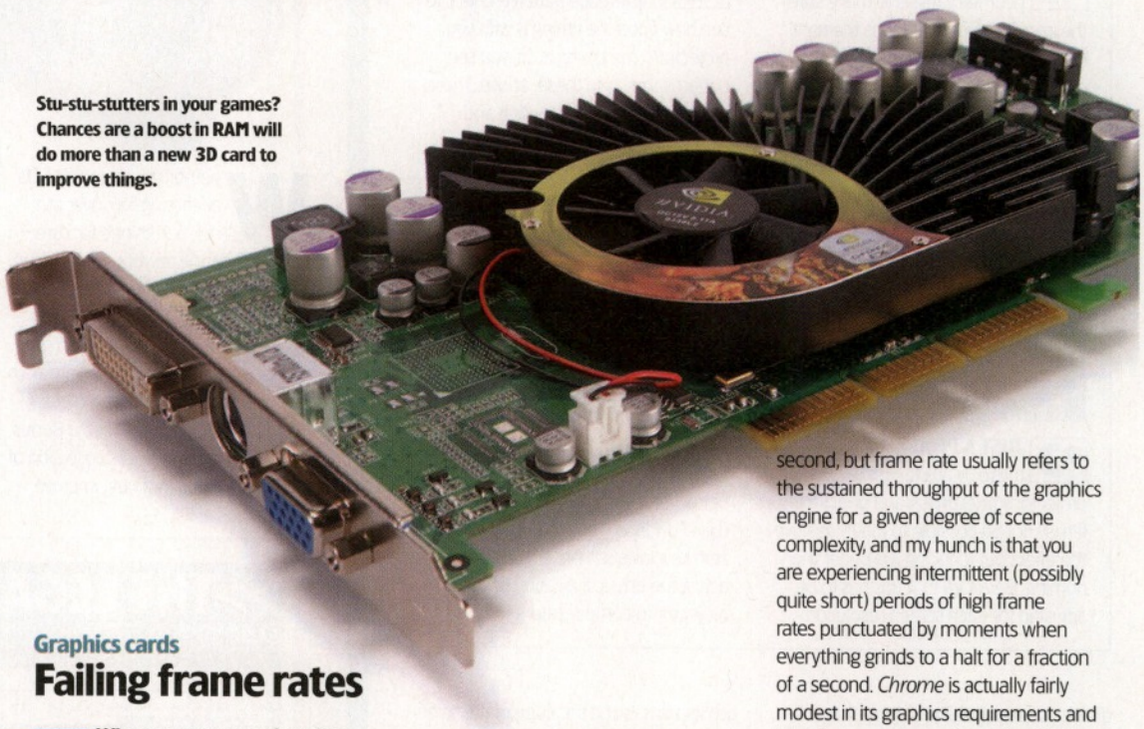
Free technical support

Got a problem with your PC? Write to Luis, or better still drop him an email. Assuming you can get your PC to work, that is...

pcfhelpline@futurenet.co.uk
PCF Helpline
30 Monmouth Street
Bath, BA1 2BW

Get help here!

Paying no heed to the lateness of the hour, **Luis Villazon** is driven only by the size of his overdraft as he answers your questions.



Stu-stu-stutters in your games? Chances are a boost in RAM will do more than a new 3D card to improve things.

Graphics cards

Failing frame rates

Q **What components of my PC are the best to upgrade first to increase gaming performance? This sounded quite basic to me, so I bought myself a Radeon 9200 128Mb graphics card. I was surprised to find, although the detail was a lot better, it didn't seem that much faster than before. I've decided to upgrade my RAM to 512Mb but I'm unsure if this will reduce the stutters I'm getting in games like *Chrome* (is this frame rate?). I have a P4 Celeron 1.7 on a P4 Titan GA-8SIMLP motherboard with SIS 650GX chipset, 128Mb RAM and a 20Gb hard drive. I've been told increasing the hard drive capacity will not help, but why do laptops have a larger hard drive – to counter a slower processor? After all this, does it boil down to the speed of the processor?**
Lee Wildon
maisomlee@telkomsa.net

A These stutters of yours obviously are the frame rate, in the sense that you see fewer frames per second, but frame rate usually refers to the sustained throughput of the graphics engine for a given degree of scene complexity, and my hunch is that you are experiencing intermittent (possibly quite short) periods of high frame rates punctuated by moments when everything grinds to a halt for a fraction of a second. *Chrome* is actually fairly modest in its graphics requirements and the minimum spec only requires that you have "a 3D card", which you have now and had before. On the other hand it lists the minimum memory for the game as 256Mb. My guess is that the game is stalling as it loads textures in and out of main memory. Upgrade and you should see an improvement.

Upgrading the hard disk won't help to any appreciable degree. Laptops have bigger hard drives than your desktop because they are newer and more expensive. Most desktops have bigger hard drives than yours as well. Hell, my iPod has a bigger hard disk.

"Most desktops have bigger hard drives than yours. Hell, my iPod has a bigger hard disk"

Reader's Tip

Barry Martin
bobnbaz@hotmail.com
If your disk is formatted for NTFS, you can set your folder options to show encrypted and compressed files in blue. This only affects files compressed or encrypted by NTFS itself, though.

OS wars

2K or not 2K?

Q **Is Windows XP better than 2000? 2K appears to be the most stable Windows OS I've used, including XP. So is it any better? I've used XP solidly for about two weeks and found it to be 2K with a different colour scheme and a few irritating habits. The number of**

>>POWER SUPPLY UNIT

The box that ramps up the amps to keep your PC pumping.

ON/OFF SWITCH

Controls the power coming in to the power supply unit, but not the power going out. PSUs always have the 5-volt supply to the motherboard live. The others are switched on and off by the motherboard itself.

AC IN

The main job of the PSU is to change high-voltage AC power that is efficient for transmitting over long distances to low-voltage DC power that is needed by solid-state devices. This is all done with transformers and rectifiers in a manner that is understood only by those who paid attention at school.

FAN

The laws of fluid dynamics state that any moving surface is surrounded by a thin layer of the medium that is stationary relative to the surface. Small enough dust particles can thus collect on the blades of the fan without being blown away.

SILENT RUNNING

Transformers generate a lot of heat so PSUs need fans and fans are noisy. There are two ways to reduce this. Expensive PSUs use sleeve rather than ball bearings, which are quieter but less resistant to knocks and bumps. The other way is to turn the fan voltage down when the PC is idle.

CABLES

The four-wire cables with Molex connectors are 12-volt lines used to supply high-drain devices, usually drives. The big cluster of cables supplies several different voltages for the motherboard components ranging from 3 volts to 24.

CASE

The metal case is earthed so that an internal short circuit will drain out of the earth wire and not through your fingers. Opening the case is A Bad Thing because of slow-drain capacitors used to smooth out voltage spikes. PSUs can retain dangerous currents for an hour or more after being unplugged from the mains.

hotfixes it has is slightly worrying, it's almost like they have released it on beta testing to the public. Maybe it's so the next version will be stable and secure enough to install straight off without downloading patches.

When you consider the fact that it's essentially merging 9x and NT, there's going to be some problems but I have to ask – is it necessary? 2K was fine, I enjoy using it. Microsoft says Win XP offers more innovation, but does this mean I have to get treated like a simpleton every time I switch my machine on?

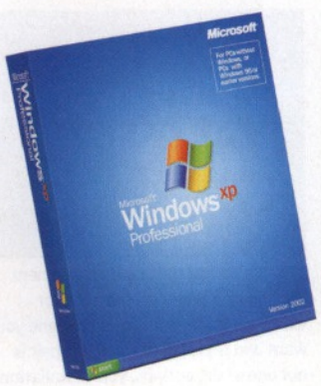
Chris
fishinspace@hotmail.com

A Oh, I think there's no need to wait until then. Merging the NT/2K kernel with Windows 9x was the Holy Grail of operating systems for at least five years before XP came out. Now we finally have it and you are saying, "The Cup of Christ? I dunno, maybe a plastic beaker from Ikea would be just as good."

The constant stream of hotfixes from Microsoft is frequently seen as a bad thing from those who like to stare down the throats of their gift horses but, given the choice between having bugs fixed for

"The Cup of Christ? I dunno, maybe a plastic beaker from Ikea would be just as good"

free, as they are found, or waiting two years and paying £100 for an 'upgrade', you won't find me queuing with my cheque book. XP is better than 2K for the simple reason that it is a superset of



It's official: Windows XP is Microsoft's best OS yet. It must be true if Luis says so.

it. Set the interface to classic, run a very restricted set of applications on a much narrower range of hardware and put up with 12-month-old drivers, and you can have all the fun of Win 2K without ever leaving XP. I've been using PCs since DOS 3.0 and the only operating systems I have never bothered to install on my own machines are Millennium and Win 2K. Both were born of attempts to bridge the gap between the NT and 9x families but each one fell short and didn't offer enough reason to upgrade. So I stuck with NT4 and Win 98 SE. Windows XP is the bridgehead in Microsoft's plan for world conquest and, imperfect though it is, I still maintain that it is its best operating system yet.

Though DOS 3.31 was pretty good at the time.

CD-ROM

Drive is dead

Q When I put a CD (any CD) into my CD-RW drive, my computer restarts. This happens just before the autorun, while it is either installing software or playing music, and after writing a CD. It doesn't happen all the time but it's often

FAQ

WIMAX

Is this a better version of Wi-Fi?
Well, it's a different version, anyway. Properly known as IEEE 802.16, WiMax is a new wireless networking standard that will offer hundreds of megabits per second bandwidth and a range of up to 50 kilometres.

But doesn't higher bandwidth mean higher frequency?
Not necessarily. WiMax operates in the 2.5 to 2.7GHz band, using wideband spread spectrum technology to distribute the bandwidth over lots of frequencies, rather than trying to cram it all in.

Isn't 2.5GHz microwave radiation? We'll all be cooked!
WiMax is much too weak for that. Microwaves are already used for long distance communications relays in wide area networks and mobile phone base stations.

So how is this new, then?
What's new isn't the choice of frequency, so much as the communications protocol that encodes the signal. The spread spectrum technology makes WiMax much better at going around obstacles because reflections from different frequencies can be compared and cancelled out. WiMax is also designed to carry network data rather than voice.

When can we buy adaptors?
The standard should be ratified by the time you read this and the first products will probably appear early next year. It probably won't be aimed at the home LAN, though.

Why not?
Realistically, there is far more bandwidth available than you are likely to want to pay for. The huge range also means that a single WiMax antenna could put a lot of Wi-Fi hotspots out of business in an urban area and the equipment is all made by the same manufacturers.

What's it for then?
It's a great way to deliver broadband net connections. With a relatively small investment, a new company can waltz in, set up a few antennae and steal a lot of the trade from conventional cable and ADSL providers. That means more competition and lower prices.

enough to be irritating. Sometimes when it restarts, either just before the welcome screen or the start-up screen (if I have a CD in the drive) it will also restart. If I use another CD-RW drive of the same make, everything works fine. When I use my CD-RW on another computer it also works fine. If I use a BTC CD-RW on my computer it also works fine.
Chris Jolly
jollym@absamail.co.za

A What you need is a screwdriver, a sturdy plastic bag and a credit card. Undo the case and the drive retaining screws (with the screwdriver), remove the drive and stow it securely (in the bag), then take the bag to your dustbin, grasp the lid firmly with your free hand and lift. Next (and this is the important bit) lower the bag into the bin with the other hand and replace the lid. Now take the credit card and buy a new CD-RW drive.

Networking

Network me

Q **I would like to transfer files – *Word, Excel, PowerPoint* and so on – from my Compaq laptop to my PC, and then back them up on to CD-R. A good proportion of the files are over 1.4Mb, so too big for floppy disks. How can I do this?**
Ted Pearce
ted.pearce@virgin.net

A By networking them, of course. In this day of cables and solid state memory, floppy disks are the last resort, not the first. When you consider the amount of ridiculous legislation that supposedly protects us from ourselves – moulded plugs on all electrical appliances, can't buy more than 16 aspirin at a time, can't sell cluster bombs to under eights and so on – I find it extraordinary that it is possible to own more than one PC without being forced to network them or be garrotted with a length of CAT5 cable.

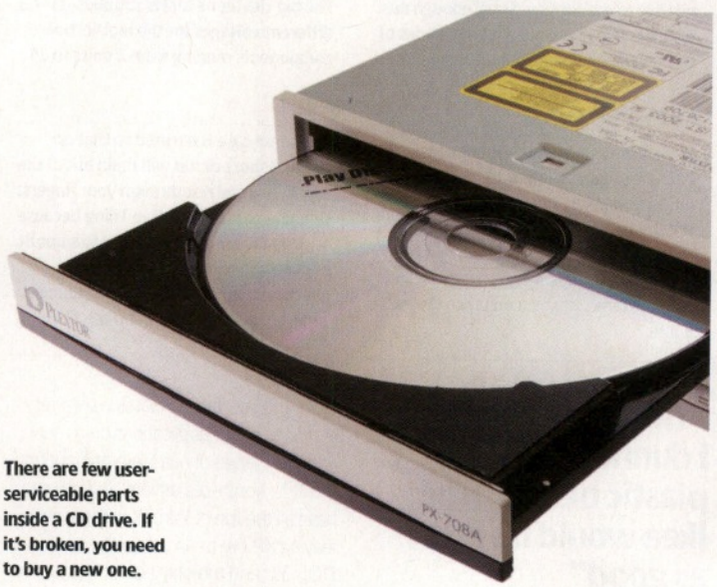
I'm not even going to touch on using the Files and Settings Transfer Wizard with a length of serial cable, and I'm certainly not going to explain how to use *WinZip* to span large files across several floppies. These are ugly, cumbersome and totally unnecessary solutions to a completely basic problem. It would be like performing a laryngotomy on someone who had just decided to hold their breath for a lark. The solution, the only solution that makes any sense at all, is to get a cheap two or four-port hub and plug each PC into it with CAT5 cable. Then run the Network Setup Wizard on both machines and right-click one or more folders on each machine, then select **Sharing and Security➡Share this folder on the network**.

If you lack a network adaptor on either or both machines, your best bet would be to email the files to yourself and transfer them that way. Actually, no. Your best bet would be to go and buy network adaptors. Right now, selling a kidney, if necessary. Not only is this much simpler and quicker in the long run but if my Private Members Bill becomes enacted into law, you will also save yourself a nasty garrotting.

Reader's Tip

Shannon Gryffiths
courtneymoore@yahoo.com
To automatically resize Explorer columns in detail view in Windows XP, move the cursor to the boundary between columns until the cursor changes shape and double-click. Pressing [Ctrl] as well does all the columns at once.

"If my Private Members Bill becomes law, you will save yourself a nasty garrotting"



There are few user-serviceable parts inside a CD drive. If it's broken, you need to buy a new one.

Security

Saucy searches

Q **What does ehttp mean? Ever since I looked at some, erm, adult orientated sites, my browser has redirected my search engine to Hand-book.com and when I enter an address into the address bar, it regularly says that the page failed to load and redirects me to another search page, with ehttp in the address bar.**

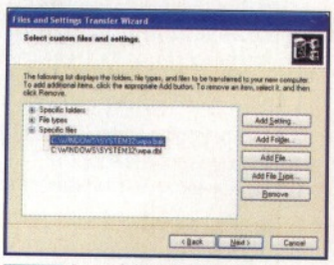
I have run *Norton Antivirus* and *Ad-aware 6* several times without success and resorted to searching through some files manually to find the bugger. And all to no avail. Apart from anything else, it has cured me of any interest in this type of website.
JPS
kd006d5526@blueyonder.co.uk

A Well, we certainly can't have that. (Today's essay question is, 'The internet cannot survive as a global communications infrastructure without the porn industry. Discuss.')

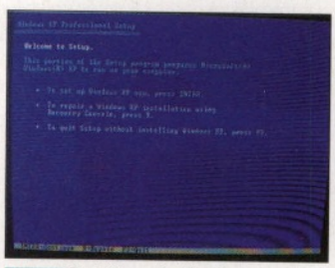
The domain that is actually appearing in your address bar is **www.**

>>WINDOWS XP REPAIR INSTALLATION

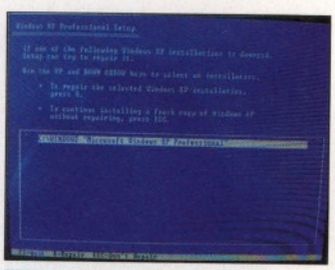
How can I reinstall Windows without reformatting my hard disk first?



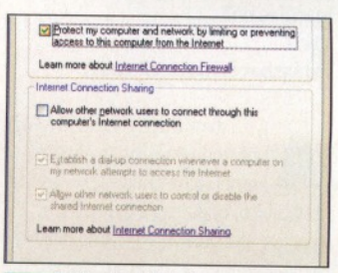
01 **A repair install replaces the system files but should leave applications and settings intact. Just in case, though, back up your data and any apps you don't have CDs for. Back up the Windows Activation Key at c:\windows\system32\WPA.DBL and WPA.BAK too.**


Windows XP Professional Setup
Welcome to Setup.
This portion of the Setup program prepares Microsoft(R) Windows(R) XP to run on your computer.
To set up Windows XP now, press ENTER.
To repair a Windows XP installation using Recovery Console, press R.
To quit Setup without installing Windows XP, press F3.

02 **Boot from the XP CD. You may need to change the boot order in the BIOS to force the PC to boot from the CD. At the Welcome screen, press [Enter] to setup Windows XP now. Do not press [R] to repair a Windows XP installation using the Recovery Console.**


Windows XP Professional Setup
If one of the following Windows XP installations is damaged, Setup can try to repair it.
Use the UP and DOWN ARROW keys to select an installation.
To repair the selected Windows XP installation, press R.
To continue installing a fresh copy of Windows XP without repairing, press ESC.
Windows XP Professional

03 **Accept the licence agreement and Windows searches for existing installations. Select the one you want and press [R] to start. If repair is not one of the options, your installation probably can't be repaired and a fresh install may be your only option.**


Protect my computer and network by limiting or preventing access to this computer from the Internet
Learn more about Internet Connection Firewall.
Internet Connection Sharing
Allow other network users to connect through this computer's Internet connection
Establish a dial-up connection whenever a computer on my network attempts to access the Internet
Allow other network users to control or disable the shared Internet connection
Learn more about Internet Connection Sharing

04 **When the PC reboots, don't press any key to boot from the CD again. Setup continues as if it were doing a clean install, but without deleting your data or app Registry keys. Enable the firewall before you activate Windows on the net to avoid the Blaster worm.**

Wireless networks are OK, but the cheapest way to transfer files at home is with a hub and some CAT5 cable.

ehttp.cc. Just in case you haven't come across the .cc top-level domain before, it belongs to the Cocos Islands. Still no wiser? Well, according to the CIA World Fact Book (**www.cia.gov/cia/publications/factbook/geos/ck.html**), this archipelago is in the middle of the Indian Ocean and has a total land area of 14 square kilometres and a population of just 630. Since the only recorded industries for the islands are tourism and growing coconuts, it seems safe to conclude that a lax corporate legislature plays a bigger role in the decision to register a search engine there than any particularly impressive communications infrastructure.

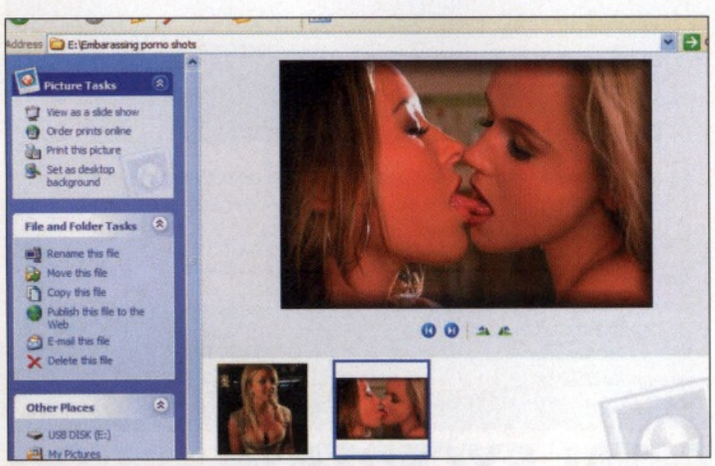
If you look at **www.ehttp.cc**, you'll be informed that ehttp stands for Enhanced HyperText Transfer Protocol, however for 'enhanced' read 'fraudulent.' It works like this. You download and install an executable file purporting to be a code cracker or a dialler for adult subscription websites, but instead of acres of freely exposed skin, you get a Trojan for your troubles. There are dozens of variants but they all belong to the family known as the CWS Hijacks. Every time you try to load a search engine or do a DNS lookup (which happens whenever you type a URL in the address bar) you get redirected to another, less useful, search engine and the Trojan author racks up another few cents in referral fees in his account at the Bank of Cocos.

Fortunately, the solution is as simple as my explanation was verbose. Grab *CWShredder* from **www.spywareinfo.com/~merijn/files/cwshredder.zip**, or install it from the disc, unzip, launch and follow the instructions therein.

OS glitches

File corruption

Q I have an Athlon XP 1800+ running XP Home. I recently carried out a Windows Update that contained a service pack for *Internet Explorer* and various other updates. Immediately after installing the updates, other users on the PC were unable to access the internet,

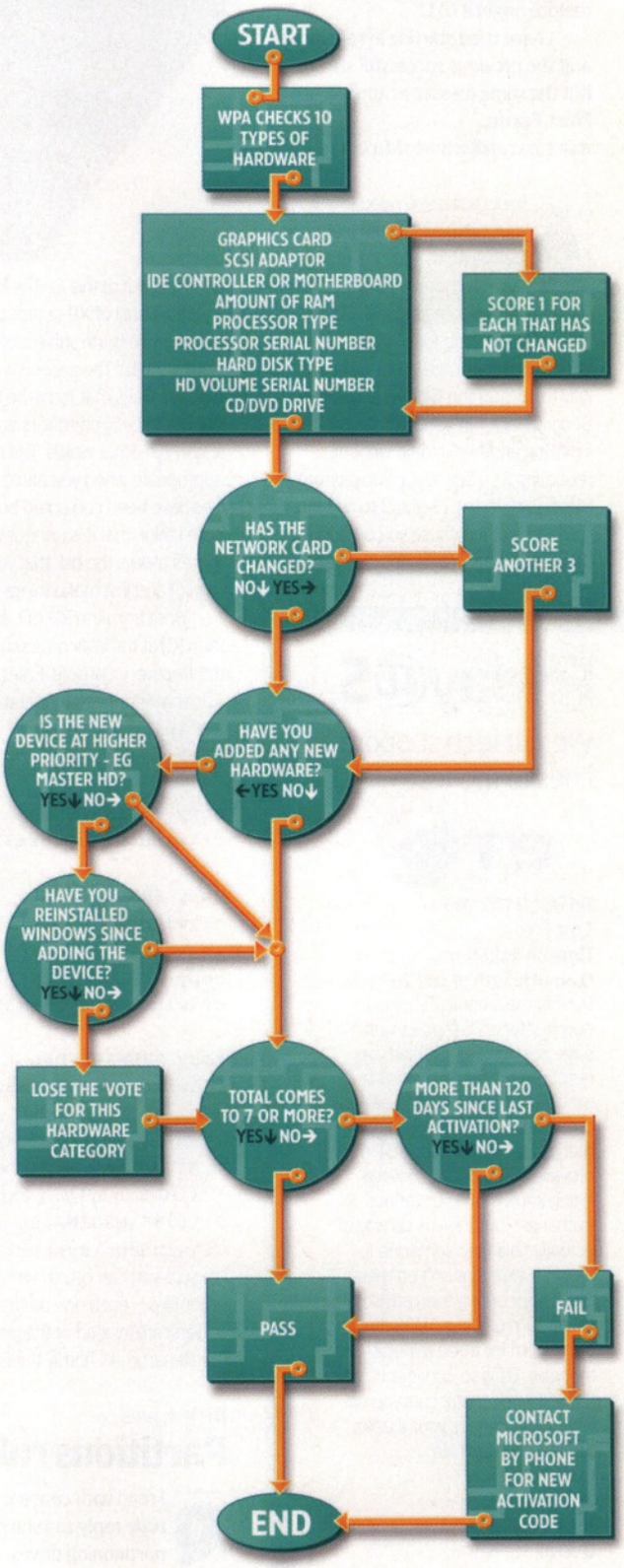


Been conducting a few suspicious searches on the internet? Be sure your sins will find you out. Either that or a Trojan will infiltrate your PC and cause no end of hassle.

XP EXPLOITS

Windows authentication

Q How much hardware can I upgrade on my PC without having to re-authenticate Windows XP?
Steve Mollina
sm_quicksilver@hotmail.com



although my administrator account was OK.

I tried rolling back to the previous version of *IE* but after the reboot I could no longer get into XP. Firstly I get the message: "The procedure entry point AssocIsDangerous could not be located in the dynamic library SHLWAPI.dll." I hit [Return] and then get: "The logon user interface DLL msgina.dll failed to load. Contact your administrator to replace the DLL or restore original DLL."

I have tried starting in safe mode and the previous successful startup but the same messages appear.

Mart Bacon
mart.bacon@ntlworld.com

A Sounds like you need to reinstall your GINA. The Graphical Identification and Network Authorisation component is part of Win 2K and XP. For some reason it seems to be the first thing to fall over when Windows Update goes south. The classic way to corrupt the GINA is to install Service Pack 1 in XP and then try installing another update without rebooting first. So maybe you did that and maybe you didn't. My job is to find solutions not to accuse you of technical bungling (that's just a hobby). There are two ways out of this fix. The first is to do a repair install of XP (which by happy coincidence is the subject of this month's walkthrough). The second is to extract only the DLLs that form the GINA. Slicing the whole belly open versus keyhole surgery, in other words. The reinstall is appropriate when you aren't sure which files have been corrupted but in your case I think that it is unnecessary, and there's always the risk that you'll screw up (again) and just make things worse.

Boot from the XP CD, and press [R] then [C] at the Welcome screen to start the Recovery Console. Enter the Administrator password and then type:

```
cd \windows\service
packfiles\i386

copy MSGINA.DLL
c:\windows\system32

copy SHELL32.DLL
c:\windows\system32

copy WINLOGON.EXE
c:\windows\system32

copy SHLWAPI.DLL
c:\windows\system32
```

If the DLLs aren't in the Servicepackfiles folder, you have to extract them from the XP CD directly by typing `expand D:\i386\MSGINA.DL_ C:\windows\system32` and so on. I'm sure you can figure out how to do the other files – each one on the CD has an underscore instead of the last letter of the filename. It's hardly the Enigma Code.

Anything a partition can do, NTFS can do better. But Tim Clarke doesn't agree.

Reader's Tip

Morden Flyte
mflyte281@telecomsa.net

Winchat is a free app included with Windows XP that enables you to send text messages to anyone on your LAN. Click **Start➡Run** and type `winchat` to launch it. Click **Conversation➡Dial** and select another PC. If they are running XP, their PC actually rings.

Disk drives

Partitions rule!

Q I read with concern your rather rude reply to John regarding partitioning drives. As an IT professional, one of the key strategies I adopt is to partition drives. I generally split a drive into two, one for Windows and programs, and one for data. The primary reason is for ease of any future re-formatting. If (for any reason) there is a requirement to wipe Windows and start again, with all data safely stored on a separate partition, there are no worries on how or where to back it up, as it won't be deleted.

Many other minor benefits extend from this. If all data is on drive P, for example, it makes it easier to back up (on to DVD, tape and so on), or to share across a network. Yes, of course you can do this by folders, but if you have more than one user set up on the computer, it becomes more difficult, as the data is not all in the same place. Anyway, let's face it, drives are so big nowadays, why not split them up into convenient sections? You would not put your T-shirts in the same drawer as your wife's even if there was room – you have a drawer each. In the same way, don't mix programs and data on the same drive.

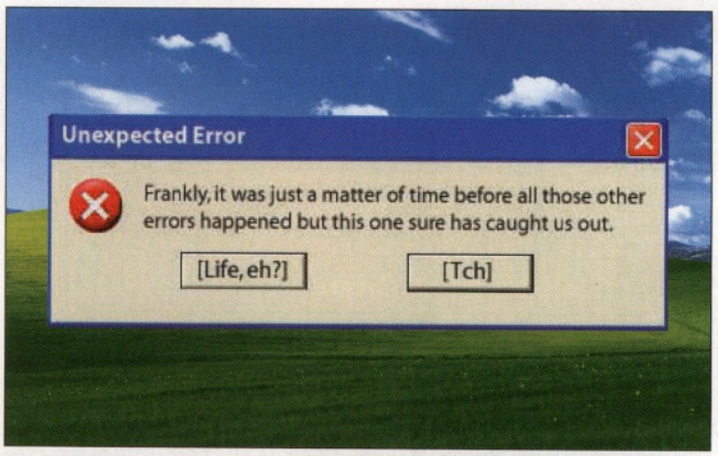
I have on two separate occasions had customers come to me with wiped C drives. One turned out to be a hardware failure, while the other I suspect to be a virus. Fortunately, both were partitioned drives, and their data was safe.

As the only case you have put up for not partitioning hard drives is that you clearly do not like the practice personally, I suggest that you consider the practical use that the policy has.

Tim Clarke
Director, Completely Computers Ltd
tim.clarke@completely-computers.co.uk

A Complete rubbish from start to finish. The only reason you have given for partitioning drives is that you get a warm glow from the imaginary

"My job is to find solutions not to accuse you of technical bungling (that's just a hobby)"


Unexpected Error
Frankly, it was just a matter of time before all those other errors happened but this one sure has caught us out.
[Life, eh?]
[Tch]

FATAL EXCEPTION ERROR

Friday@5

We put tech support lines to the test.

BT

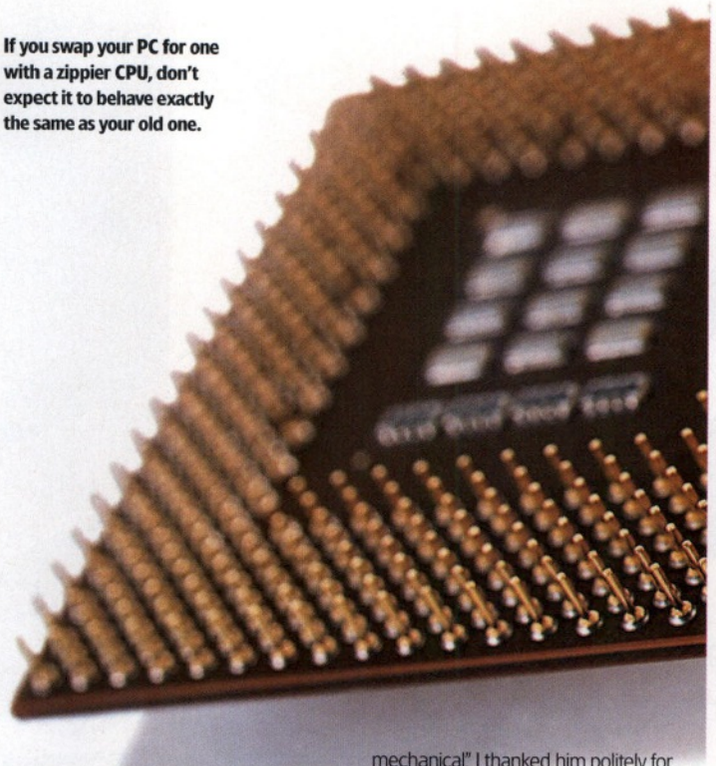
Tel 0800 169 0199
Cost Free
Time on hold None
Overall length of call 2.5 mins

Putting the technical support number for an ISP on its web page is a little like keeping your emergency lighting candles in a windowless cellar. On the off-chance that you already memorised the number, BT provides a recorded message listing known faults at various exchanges but there is no way of actually talking to someone to report a fault that isn't on their list. The recording then advises you to turn off your ADSL router or modem for three minutes and try again. BT is so confident that this will work, that it cuts you off without waiting for your thanks.

Solved problem No
Courtesy ★★★☆☆
Efficiency ★★☆☆☆
Tech knowledge ★☆☆☆☆
Overall ★☆☆☆☆

sense of neatness you get. I put my T-shirts in a separate drawer, not a different wardrobe. Explain how sharing a drive is easier than sharing a folder. Explain why you think that sharing all user data on a network is a better strategy than sharing files folder-by-folder. Explain why you need to reformat an entire partition just to reinstall Windows, rather than simply deleting the Windows folder. And explain how a hardware failure on a drive would affect just one partition and leave others on the same drive miraculously intact.

Logical drive partitions are an evolutionary throwback to a time when the BIOS and filing system couldn't access drives over a certain size. The reason I don't like the practice is because I have never seen anything they can do that can't be better achieved by a modern filing system such as NTFS.



If you swap your PC for one with a zippier CPU, don't expect it to behave exactly the same as your old one.

BIOS

Sleepless in silicon

Q Eight months ago, I swapped my Pentium 700 for an AMD Athlon 1800 with bigger HD, memory and so on. Since the change, when I shut down I have to also switch off at the wall because if I don't, when someone phones me, my computer boots up. Unlike the previous PC, there is only a switch-on button and no switch-off. I have checked with both Computer World and OneTel, and even though they have heard of this happening, they were not able to help. A pal has suggested it may have something to do with the BIOS.
Trevor Munro
jtrevormunro@onetel.net.uk

A "Something to do with the BIOS"? What great pals you have. I have one like that who once watched me seize all four pistons on my TR7 because of a faulty oil pressure light, before helpfully observing, "That sounds mechanical." I thanked him politely for ruling out any thermonuclear or sonoluminescent causes before suggesting that he might like to continue the remainder of our friendship on the other side of the Atlantic. Where he lives to this day.

The "something" in your BIOS is a feature usually called Wake on Ring, and it enables you to remotely log into your PC or receive faxes without having to leave it switched on. Waste of time, frankly, when you consider the couple of minutes it takes most PCs to boot. But hey! It's easy enough to disable. Hit [Del] when prompted in the boot sequence to open the BIOS setup program and you'll find it on the **Advanced** or **Power Management** page.

Oh and I think you'll find that if you hold the Power button in for a few seconds, the "switch-off function" will reveal itself. (Name one device that has separate buttons for on and off.) **PCF**

Reader's Tip

Harry Hartenhoff
harty@worldonline.co.za
To preview mpegs on the right-click menu, click **Start→My Computer→Tools→Folder Options→File Types**. Select **MPEG** from the list and click **Advanced→New**. Type `Preview` as the **Action** and `c:\windows\system32\mplay32.exe` as the **Application**.

"If you hold the Power button in for a few seconds, the 'switch-off function' will reveal itself"

Luis & Ned
RUN FOR YOUR LIFE IT'S THE GREY GOO!
WHAT? ALL CONSUMING, SELF-REPLICATING NANOBOTS?
OF COURSE! WHAT ELSE? C'MON HELP ME PACK!
YOU HAVEN'T JUST LEFT A POT ON THE STOVE AGAIN, SAY?
HMM, YOU KNOW YOU MIGHT JUST BE ON TO SOMETHING
I'LL GET THE MOP

Words Luis Villazon **Pictures** Mark Mitchell

PCF FORUM CUTTINGS

Visit the forum (http://forum.pcformat.co.uk) for technical tips.

I have a new key drive. It's very nice and, on 99 per cent of machines, works without a hitch. Except my internet machine at home. If the drive is plugged in during POST, it doesn't get past the memory check. If the drive is plugged in during a Windows session, the whole machine hangs. The only way to get it working and operational is to plug it in immediately after the Windows ME splash screen.
Spooky7000

Think I see the problem: Win ME.
Cathalmccabe

Shhhhhh... It's the only one I own legit, and so is the only one I dare put on the internet machine. I think this is a BIOS problem. Putting the drive into a USB port hangs my machine full stop.
Spooky7000

Mine works fine on 98 SE, on two separate machines. Both Intel chipsets. Could be a BIOS detail, they can seek USB devices on boot, such as mice. Disabling USB seek/mice in the BIOS might help.
egon

I had the exact same problem with my 128Mb memory key, which was a joy on any machine except for one – which was running ME.
Temp

I've since disabled the following:
Assign IRQ to USB
USB keyboard
Now it POSTs fine but Windows is still dodgy. It must be a Windows problem. If I plug it in before Windows starts loading it is fine.
Spooky7000

My keydrive worked fine on ME once I'd installed the encryption app, *Jupiter*, that came with it. I didn't use the app. The PC detected the keydrive whether I plugged it in before boot or after loading ME.
Glamdring

How's this: I now have XP Pro on this machine, and the problem remains. My USB hubs share their IRQ with another device, I think it might be my soundcard and I've read the VIA rev 5 USB hub doesn't like sharing its USB IRQ.
spooky7000

Answers to Luis Quiz, p144 and p146

WIN! A STONKING LAPTOP!

Here's your chance to win a Samsung laptop worth £1,599 plus a whole bunch of Sold Out games to play on it.

Fancy a swish new laptop and lots of classic games? You'd better enter our compo sharpish, then.

Cor and, indeed, lummy. Those delightful folk at Samsung are giving away a gaming laptop with all the extras. (And the basics, of course.) The M30 LWM 2800 comes with a 2.8GHz P4, giving you more than enough speed for modern games, and the ATI Mobility Radeon 9000 backs this up nicely. Chuck in a capacious 60Gb hard drive, 512Mb of RAM and Windows XP Home, and you have a system capable of taking anything the world can throw at it. A respectable weight of 3.7kg and a perfectly portable size of 279.5 x 360 x 44.5mm round off its profile perfectly.

If you're a movie fixated mobile user, then this laptop can cater to your needs, too. The 15.4-inch screen supports a native resolution of 1,280 x 800, and the integrated DVD burner is ideal for writing, editing and playing back your DVDs (as is the bundled *Ulead Video Studio 5 SE*). Combine this with fantastic built-in 2.1 sound (from a base-mounted subwoofer) plus optional 5.1 surround sound, and you have the ultimate widescreen movie experience.

The M30 also boasts all the latest communication options: three USB ports, traditional RUJ-45 LAN and built-in wireless 802.11b wireless LAN. There is also a three-in-one card reader, and a combined CD and DVD reader/writer, as well as an optional integrated floppy or internal media bay.

If a free gaming laptop isn't enough to get your bat-senses tingling, then watch out because the pile-'em-high, sell-'em-cheap fellers at Sold Out are also supplying a bundle of games to start you off. Included in this selection is a load of top games, all due for release on the Sold Out label on 26 March – including the fantabulous *Tiberian Sun* (still one of the best *Command & Conquer* iterations), the cyberpunk team-puzzler *Project Eden*, the classics *SimCity 3000* and *Tiger Woods PGA 2001*, and girl-power fun in *Tomb Raider Chronicles*.

Factor in Samsung's traditional Fastguard one-year warranty (guaranteeing free collection, repair and return in 72 hours) plus Samsung's status as the world's leading manufacturer in many fields, and this sounds like a dream come true. In fact we can't think of anything this laptop can't do. Apart from climbing stairs. And building aqueducts. And...

So what can you do about winning yourself this fantastic prize? Well, you might like to find out a little more about the M30 first, in which case pop along to **www.samsung.co.uk**, then while you're online, visit the *PCFormat* website at **www.pcformat.co.uk**, click on the competition link and answer the following question:

What sound options are there for the M30 LWM 2800?

a) 2.1 sound
b) 5.1 sound
c) Both
d) Neither

Terms & Conditions

1/ Employees of Future Publishing, Samsung, Sold Out, their agents or families, are not permitted to enter this competition.
2/ No correspondence will be entered into. The editor's decision is final.
3/ Entries must be received by 29 April 2004, which is the closing date.
4/ No purchase is necessary.
5/ Only one entry per household please.
6/ The names and contact details of entrants may be retained for marketing purposes if you click the appropriate box on the entry form.
7/ The winner will be the first correct answer selected at random from all of the entries and will receive a Samsung M30 LWM laptop, plus a selection of games from Sold Out .
8/ Winners will be notified by email or phone.
9/ We reserve the right to substitute an equivalent prize of equal value.

>>Reply all

Letters/Mail Feedback

The girl from *Silent Hill* demonstrates what happens to game pirates.

Re: Games piracy

Dejá Lû

Dear *PCF*, Games piracy is bad for the industry, nobody doubts that. Games can always be cracked by pirates and made available on warez sites, regardless of copy protection. Again, it's not open to debate. Why then, do games publishers seem happy to stagger release dates around the world? It seems that *X2* is already available in the States, yet we won't see it until several months into 2004. I've just read that the same may be true for *Deux Ex: Invisible War*. Surely publishers must know that they are playing into the hands of the pirates here. If I want to play *X2*, I have a choice between waiting until it's released here, importing it from America at great cost or downloading it from a warez site. How many people are going to choose the third option? If broadband had reached my part of the country I might be tempted.

So, what extra delights await those who are forced to wait? Localisation. Hooray! I can look forward to seeing "colour" and "centre" spelled properly. If the industry is going to carry on complaining about piracy, perhaps it should fix some of its' own glaring loopholes first.

A MacDonald (angus.macdonald @nww-tr.wales.nhs.uk)

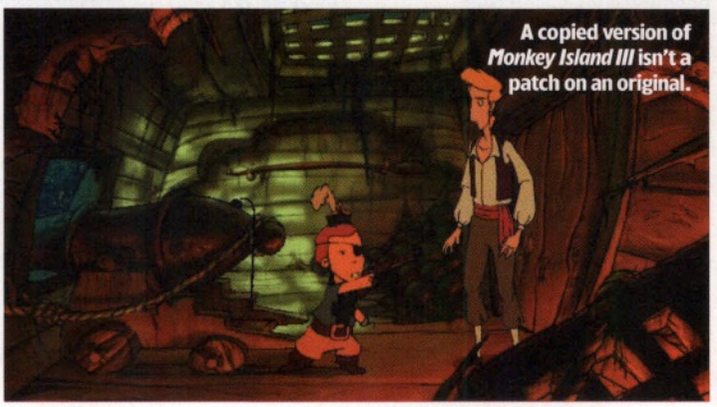
Dan replies: This email was originally published about three months ago; unfortunately, zealous editing resulted in the meaning changing substantially; for this we apologise fulsomely.

Re: Games piracy

Ahoy there

Dear *PCF*, I pirate games. If I then like the game I go out and buy it. I know for a fact that I have spent more money on games for my Commodore 64 and Amiga 500 than I have in 10 years for my PC. The reason for this is that games used to be fun. I remember playing *Pac-Man* or *Bubble Bobble* for 20 minutes and then playing something else. There was no 'Buyers Remorse' from forking out £40 for a game that has beautiful animations and sound but ends up being the same game as the one I played a year or so ago. It may be visually stunning and have a higher sprite/polygon count and a professional musical score but it's still the same damn game. There is no beating of the heart to go out and buy them on their release date. It's like *Seinfeld*, if you miss it one day, you watch it the next: it's a different episode but the same show.

The term 'Same sh't, different wrapper' really does sum it up. Think of the most cloned games in history: *Pac-man, Break-Out, Tetris, Quake* and *Command & Conquer*. They were fantastic because they were fun and had their own personal backbone. I know that game publishers wish dearly that they could stumble upon a

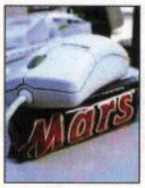


A copied version of *Monkey Island III* isn't a patch on an original.

fwd>>fwd>>

Kelly-Marie Dudley's inbox, after anti-virus bear traps.

<<1> He's a cunning and conniving buffoon, whose wacky cohorts and over-ambitious plans for domination keep us laughing long into the prime time schedule. And for an extra twist, he's donned Blackadder's costume.



<2> Gung ho British spirit means never accepting second place in the space race. Attempts to falsify traces of rodent life on Mars have suffered severely in budget cuts.

<3> In the fight against a virus ridden PC, software engineers have resorted a more traditional method of controlling the flow of cyber sex transmitted diseases on your desktop.

<4> It's life Jim but not as we know it, not as we know it, not as we know it, not as we know it Captain... the pointy eared one is finally embracing the Firm's school disco classic in style.

>>SNIP >>SNIP

If it can't be said quickly, it ain't worth a [snip!]

Crap continuity

(Issue 158) On the cartoon on page 150, in the last textbox it says 'Because he took the hammer to Mr Aloysius' G5 anyway'. The Mac shown in the first picture is not a G5, it's a G3!
Stefaan,
m_e_my_self@yahoo.com
Yes well, even we don't have the budget to take a hammer to a brand new G5 on a whim. Tempting though the prospect is.

Girls on top

Dear *PCF*, Hi, I like your mag a lot and am a subscriber but I HATE the girls on the cover etc posing ever more suggestively each month. Now don't get me wrong, I have been known to buy GQ and FHM etc on occasions and am no prude, it's just that it seems so irrelevant and if I was a woman who played games or was into PCs, which you know there are, I would get pissed off with it. It makes the mag look like those crappy biker and trucker comics.
Ross Paton
You should see the letters PC Gamer get about objectifying the likes of Duke Nukem on their covers too. Fortunately, since most of the staff on PCF are two dimensional cut outs, we don't feel like hypocrites at all.

DROP US A LINE!

The only thing that excites us more than a scoop on *Half-Life 2* is a really good readers' letter. Dan has a collection of the best going back for a thousand years. Why not see if you can make it into his top ten.
pcfmail@futurenet.co.uk

Write to us at:
PCFormat
Reply All
30 Monmouth Street
Bath, BA1 2BW

STAR LETTER

Re: A dying breed

Reports of gaming's demise premature

Dear *PCF*, I am writing to voice my opinion on the article you ran in the February edition, titled PC games: A dying breed? In it you discuss the argument that cross platform games are getting so close that PC games are rarely individual, and does this make any difference?
In my opinion yes, but not for the reasons you might think. I know children with consoles and they are no different to kids that play games on a PC, but I have also noticed that children like my three girls who play on a PC only, also learn other skills. My four year old for example can switch the PC on, start the game of her choice, play using the mouse; she also has basic keyboard skills. Because she is a genius? NO.Because she plays her games on a PC. By pushing the PC gaming format, we inadvertently teach PC skills to those who would not normally have an interest in computers. As a result, they will learn skills that will no doubt help them along their way in an ever-changing technological world.
Mr S Hale, code.red@blueyonder.co.uk

Adam says: That's exactly the argument my parents used over two decades ago to buy a ZX Spectrum instead of an Atari console. And in hindsight, I can't thank them enough, as it was the start of my lifelong affair with computing. Perhaps your daughter will be editing a world-class mag one day, too.

© Corbis

PCs: ideal for children; teaching them skills they can utilise in later life? Or just an excuse to lark about...?

Re: X2

The Threat

Dear PCF, Before I start, I should probably confess to having played a small part in helping develop *X2: The Threat*, not least in convincing the German developers that 'The Khaak Threat' might be taken to mean something else this side of the North Sea. Having read your review (*PCF* 158, Only 74 per cent?) I feel I could fill your entire letters page with an explanation of how the review missed the point. But then why should my views be worth more than those of your reviewer?
To be honest, I can't disagree with what Alec Meer said about the game he's played. I've been playing the American release since imports hit these shores and can understand his frustrations. But then again, I've also been playing a different game for the past week. The V1.2 patch for the US version only finished its beta test a week ago and I believe it is this version that will be available, with translations, across Europe. I don't see

PCF Game Guide → Gameplay Reviews
LOOKING ELSEWHERE
DON'T MISS THIS!
NEGATIVE FEEDBACK
SPACE SIMS
X2: THE THREAT
Alec Meer thanks every god he can think of that it's not another dodgy X-Men tie-in.
Corpse blimey!
Text bomb
PCFormat Verdict
74%

new genre and be the first out there, but realistically, that's really not going to happen much, and I think that more effort could be put in to giving the game its own identity.
Unreal Tournament isn't *Quake*, which is why I bought them both. Look at *UbiSoft's XIII*, they made it look like a comic book; that's different, and as a result, if I have the money and it's good, they will get my money – and good for them. It's a win-win situation and you can't get better than that.
I'm not writing to you for a justifying explanation, I just thought that someone from a game publisher might read this and realize why they are not getting my money (remember; average and majority).
Gavin Downes
downesgavin@yahoo.com
<mailto:downesgavin@yahoo.com

Adam replies: I'm sure games publishers will be delighted to hear that you pirate their software, Gavin. At the end of the day, though, that's still taking the law into your own hands, and it simply can't be condoned. While you've got a point about the quality of many lazy games today, there's always a demo to try out and a review to read before you buy; you simply can't justify software theft.

ALT.GAMING

Viet Kong by Meer & Caplin

What games are you glad they never made? Email **alec.meer@futurenet.co.uk** with your suggestions. Any ideas we use will win a prize!

how you could have reviewed this in time for it to grace your hallowed *PCF* pages?
I've been a long-standing supporter of your policy of only reviewing the games as we get them on the shelves. To my surprise, I find the front of the Gameplay section now proudly states that "We never review code that isn't signed off as finished by its publisher". This, I am right in thinking, doesn't mean that it won't be changed before release? A subtle difference, I think, from past promises, and in my view, one which removes much of the credibility away from your reviews. This is merely another nail in the coffin for my *PCF* subscription I'm afraid (I do have a crowbar handy if you can successfully explain your policy to me, though).
Ray Lashley, ray@dancingyak.com

Adam says: Publishers understand the long lead times we have to put up with in getting a magazine with cover mounts to press, and there's a well established system whereby most publishers will send review copies of games out to us at the same time as they go for mass duplication. The reason we go along with this is because they promise us in good faith that it's final code, and we need to get reviews out around the same time as the games go on sale. Most games sales are within the first two weeks of a games launch, and we feel it's far more important to provide advice to the majority of buyers than waiting for boxed copies to appear in the stores.
Alec adds: The latest patch doesn't affect the major criticism that kept the score down to 70 per cent – that the awkward menu interface holds the game back from greatness. I absolutely agree with you on the scale and depth of *X2*, and say so in the review, but I can't give a verdict on it based on enhancements that aren't available to the consumer yet, such as key-mapping and other such promised fixes.
And finally, please bear in mind that a 70 per cent score means a game is good, hence 78 per cent is very good. 70 per cent is not a bad score, which is a common misconception in reviews – our Gold Awards are reserved for the most exceptional games only.

WRITERS WIN PRIZES

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Express your inner thoughts and win a prize! Every issue, the writer of our Star Letter will receive a £70 voucher to spend at Crucial Technology's online store (**www.crucial.com/uk**). Choose from RAM, USB flash drives, memory cards, memory card readers or put it towards the cost of a new graphics card. Don't put it off any longer, not unless you want complete strangers to point at you in the street and sneer in your direction.
NB: no Star Letter prizes will be given to plagiarised content.

Back in the day

Who, What, Where And When?

You can't fault us on one coverline at least: CDs really were the future of PC entertainment. Pity you couldn't actually read the words...

IN THE NEWS
Musty academics Acorn launched a new RISC-based machine which also doubled up as a PC. What happened? Mitsubishi unleashed a 17-inch monitor for £1300.

GAME OF THE MONTH
Bit of a corker for games, what with *The Settlers*, *UFO: Enemy Unknown aka X-COM*, *Myst* and *Links*. But *Sam and Max Hit The Road* on CD warmed our palpitating hearts the most.

REVIEW OF THE MONTH
Well, loads of CDs, of course, but let's not forget *Do It On Your Desktop* or the fascinating round-up of word processors. As if you could, you loveable scallywags you.

THE REAL WORLD
We played Pulp's *Sisters* EP continually, James Binns joined the team (we use that word loosely), and the Village People were in the charts. Again.

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